TECHNICAL REPORT
NATICK/TR-92/028

AD _A 261 405_

ANTHROPOMETRY
OF THE FOOT AND LOWER LEG
OF U.S. ARMY SOLDIERS:
FORT JACKSON, SC -- 1985

By
Kenneth R. Parham
Claire C. Gordon
Carolyn K. Bensel

September 1992

Final Report

June 1985 - December 1988

UNITED STATES ARMY NATICK
RESEARCH, DEVELOPMENT AND ENGINEERING CENTER
NATICK, MA 01760-5000

SOLDIER SCIENCE DIRECTORATE

DISCLAIMERS

The findings contained in this report are not to
be construed as an official Department of the Army
position unless so designated by other authorized
documents.

Citation of trade names in this report does not
constitute an official endorsement or approval of
the use of such items.

DESTRUCTION NOTICE

For Classified Documents:

Follow the procedures in DoD 5200.22-M, Industrial
Security Manual, Section II-19 or DoD 5200.1-R,
Information Security Program Regulation, Chapter IX.

For Unclassified/Limited Distribution Documents:

Destroy by any method that prevents disclosure of
contents or reconstruction of the document.

REPORT DOCUMENTATION PAGE

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED
	September 1992	Final JUN 1985 -- DEC 1988

4. TITLE AND SUBTITLE

ANTHROPOMETRY OF THE FOOT AND LOWER LEG OF U.S. ARMY
SOLDIERS: FORT JACKSON, SC -- 1985

5. FUNDING NUMBERS

PE: 728012.30
PR: 728012.12
AG CODE: OMA1811

6. AUTHOR(S)

KENNETH R. PARHAM, CLAIRE C. GORDON, CAROLYN K. BENSEL

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)

US ARMY NATICK RD&E CENTER
ATTN: SATNC-YBA
NATICK, MA 01760-5020

8. PERFORMING ORGANIZATION REPORT NUMBER

NATICK/TR-92/028

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)

10. SPONSORING/MONITORING AGENCY REPORT NUMBER

11. SUPPLEMENTARY NOTES

12a. DISTRIBUTION/AVAILABILITY STATEMENT

Approved for public release; distribution unlimited.

12b. DISTRIBUTION CODE

13. ABSTRACT (Maximum 200 words)

In 1985, a fit test for a leather combat boot, which was recently adopted by the US Army, was conducted at Fort Jackson, South Carolina by the US Army Natick Research, Development and Engineering Center. In conjunction with the fit test, a series of 33 anthropometric measurements of the foot and lower leg (including stature and weight) was obtained on 867 male and female soldiers. This report presents statistical information for those data on the full male sample (n=293) and on a female subsample (n=491), which has been reconfigured to represent more closely the demographic composition of the current US Army female population. In addition to measurement descriptions and summary statistics for each variable by gender, bivariate and multivariate relationships in the data are also presented. This includes bivariate tables, correlation coefficients, and both simple and multiple regression equations. These data represent the most comprehensive anthropometric information on the foot collected to date. As such, the statistical information presented in this report should be of value to scientists and to developers of both military and civilian footwear.

14. SUBJECT TERMS

Anthropometry	Demography	Measurements	Army
Anthropometric Data	Dimensions	Leather	
Combat Boots	Foot	Men	
	Footwear	Women	

15. NUMBER OF PAGES

360

16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
Uncl	Uncl	Uncl	UL

TABLE OF CONTENTS

LIST OF FIGURES

iv

LIST OF TABLES

PREFACE

The boot fit study for which these data were collected was conducted by the Human Factors Group of the Life Systems Support Division in cooperation with the Clothing and Uniforms Division of the Individual Protection Directorate at Natick. At the time that the study took place, Dr. Carolyn K. Bensel, a coauthor of this report, served as leader of the Human Factors Group. Dr. Bensel was coprincipal investigator for the boot fit test along with Dr. Claire C. Gordon, also a coauthor of this report. Because of their superb efforts in planning the study and ensuring that all logistical challenges were sufficiently met, the boot fit test was a resounding success.

The high quality anthropometric data collected during the fit test are a result of the diligence and professionalism exhibited by all members of the boot fit study team. Ms. Patricia Robinson and 2LT Beth Ann Holloway are especially commended for their leadership in the measurement and boot fit portions of the study, respectively. The other crew members, in alphabetical order, were: Ms. Cecilia Alderman, Ms. Brenda Baker, Ms. Juanita Bowens, Ms. Deborah Childs, Ms. Kassandra Collins, Ms. Wanda Culler, Mr. Steve Duray, Mr. Nigel Jenkins, Ms. Kim Rhett, and Ms. Kyla White. The primary author of this report, Dr. Kenneth Parham, served as the anthropometry team leader.

Special acknowledgment is also extended to the many people at Fort Jackson who served in various capacities to bring the study to fruition. Mr. Larry Kyzer and Mr. Douglas Burchett of the Directorate of Logistics gave unstintingly of their time in the role of liaison between Natick and the military administration at Fort Jackson. In this capacity they greatly facilitated subject acquisition and other logistical requirements. Other participants from the Directorate of Logistics, without whose assistance the study could not have taken place, include COL Rayburn Stovall (Director), Mr. Lonnie Turner, Mr. Luther Wilson, Mr. John Wilson, and Mr. Edward Mizzel. The latter two individuals served as expert boot fitters during the fit test as did Mr. Richard Braga and Mr. William Montuori of the Clothing and Uniforms Division at Natick.

Special thanks also are extended to the staff of the Fort Jackson Administration School, site of the actual fit test. In particular, the following individuals were instrumental in coordinating the test facilities and ensuring that the test participants were available when required: CPT Monica Russel, Director of the Administration School; CPT Todd Smith, S4 of the 4th Brigade; 1LT Brian Kennedy, Assistant S4; and SFC Joseph Benzin.

Finally, the authors would like to extend appreciation to Ms. Nancy Bell, Ms. Christine Bukruian, Ms. Sarah Donelson, and Ms. Ellen Wolfson of GEO CENTERS, Inc. for their significant contributions in the preparation of this report.

ANTHROPOMETRY OF THE FOOT AND LOWER LEG OF U.S. ARMY SOLDIERS:
FORT JACKSON, SOUTH CAROLINA - 1985

INTRODUCTION

The purpose of this report is to present statistical information for a series of anthropometric measurements of the foot and lower leg (plus stature and weight) which were obtained on male and female U.S. Army soldiers from Fort Jackson, South Carolina during the summer of 1985. These data were collected in conjunction with a fit test for a recently developed leather combat boot which, in 1984, was adopted by the U.S. Army as a replacement for the previously-issued standard leather combat boot. The primary purpose for acquiring the anthropometric data was to assess various aspects of fit of the new boot, especially among women, and to discern quantitative relationships between foot dimensions and the forms over which the combat boots are fabricated (i.e., the MIL-5 last system).

An ancillary but equally important reason for acquiring these data was to expand and augment the existing data base for foot dimensions of both male and female Army soldiers. Until recently, anthropometric foot data for U.S. Army women was available from only two primary sources. These are the anthropometric survey of Army women conducted in 1946 (Randall, 1947; Randall and Munro, 1949), and the more recent 1977 anthropometric survey of Army women (Churchill et al., 1977; Laubach et al., 1977). In the earlier survey only five dimensions of the foot were measured. In the 1977 survey 13 dimensions of the foot and lower leg were measured.

Understandably, more anthropometric foot data exist for Army men than women. In 1945, a series of 27 foot measurements was obtained on 6,278 white male soldiers and 1,281 black Army men from Fort Knox, Kentucky (Freedman et al., 1946). This survey precipitated other more esoteric, but quite important, studies of the foot. For example, two such works in which Fort Knox data were analyzed (Randall et al., 1951; Mann and Zacharias, 1952) pertained to the sizing and tariffing of military footwear. Both these studies greatly influenced the development of the MIL-5 last system still in use today by the Army. In addition to the Fort Knox study, anthropometric foot data for Army men is also found in more general anthropometric surveys conducted in 1946 (Randall and Baer, 1947; Newman and White, 1951), in 1959 (White, 1961), in 1966 (White and Churchill, 1971), in 1970 (Churchill et al., 1971), and in 1977 (McConville et al., 1977). It is important to note that foot data from many of these male and female anthropometric surveys as well as others were compiled by Robert White in a compendium entitled "Comparative Anthropometry of the Foot" (1982).

In terms of representing the present Army, only the recently completed anthropometric survey of Army men and women (ANSUR) (see Gordon et al., 1988) provides anthropometric foot data that is more current than the Fort Jackson data presented here. However, in terms of the variety and number of foot

dimensions measured, the female data set from Fort Jackson is not matched by ANSUR nor any of the other female surveys mentioned above, and the only male data set comparable to Fort Jackson is the Fort Knox survey. In essence, the Fort Jackson data set represents the most comprehensive array of foot measurements ever obtained on both male and female U.S. Army soldiers.

Because of the comprehensive nature of these foot and leg data, there is little doubt that the statistical information contained herein will be of interest and value to a wide variety of scientific disciplines including podiatry, orthopedics, anatomy, and anthropology, to name a few. Of perhaps greater importance to the Army, however, is the fact that these data should lead to improvements in the future development of military footwear.

This report is organized into five chapters. Chapter I discusses the derivation of the samples and presents biographical information, including both demographic and military data. Chapter II details methodological considerations in obtaining the data. Chapter III pertains to univariate statistical measures of the data and, in addition to statistical summaries, presents line drawings, photographs, and descriptions of the variables. Chapter IV details bivariate relationships in the data, including bivariate frequency tables, correlation coefficients, and regression equations. Finally, Chapter V explores multivariate relationships in the data including multiple regression and correlation.

CHAPTER I

THE SAMPLES

In addition to the anthropometric data, biographical data were obtained on each subject. These data include military information, demographic information, and personal information such as handedness, frequencies of broken bones, and data pertaining to footwear usage. The purpose of this chapter is to describe the male and female samples with regard to the biographical data, excluding information on footwear usage, and to discuss the derivation of the samples. Data on footwear usage are to be analyzed and reported separately from the current information.

Sample Size

A total of 867 soldiers, including 293 males and 574 females, participated in the foot study at Fort Jackson. Approximately two-thirds of the subjects were students participating in Advanced Individual Training (AIT) at the 4th Brigade Administration School. The remaining third consisted of basic trainees, cadre from basic training units and the AIT school, a few participants from Drill Instructor School, and military nurses, technicians, aides, etc. from Moncrief Army Community Hospital, the primary medical facility at Fort Jackson.

For the purposes of this report, the male sample is comprised of the entire 293 individuals measured. The female sample, however, is comprised of only 491 of the 574 subjects originally measured for reasons mentioned below in the discussion on racial distribution of the samples.

Military Information

Table 1 presents the distribution of the samples by rank. Of the 293 males only four are officers. Of the 491 females only seven are officers. Approximately 77% of the male and 88% of the female enlisted personnel are subsumed in the lower three enlisted ranks. Table 2 presents the distribution of the samples by length of service. As can be seen, approximately 72% of the males and 86% of the females had spent less than two years in the service. Table 3, which presents the distribution of the sample by primary MOS, shows that the majority of both males (61%) and females (85%) are included in the administration category. The large percentage of individuals in the admininistration category reflects the fact that about two-thirds of the subjects were administration AIT students. This, coupled with the fact that some basic trainees were included in the samples, explains the large percentages of lower ranking personnel and the large number of individuals with a limited time in service.

Table 1. Distribution of the Samples by Rank

| Rank | Officers | | | |
| | Males (N=4) | | Females (N=7) | |
	n	%	n	%
Lieutenant Colonel	1	0.3	2	0.4
Major		0.0	2	0.4
Captain	3	1.0	2	0.4
1st Lieutenant		0.0	1	0.2
2nd Lieutenant		0.0		0.0
Total Officers	4	1.3	7	1.4

| Rank | Enlisted | | | |
| | Males (N=289) | | Females (N=484) | |
	n	%	n	%
E-9	2	0.7		0.0
E-8	3	1.0	1	0.2
E-7	14	4.8	6	1.2
E-6	15	5.1	4	0.8
E-5	26	8.9	22	4.5
E-4	4	1.4	19	3.9
E-3	43	14.7	117	23.8
E-2	93	31.7	149	30.3
E-1	89	30.4	166	33.8
Total Enlisted	289	98.7	484	98.5

Table 2. Distribution of the Samples by Length of Service

Length of Service	Males (N=190)		Females (N=232)	
	n	%	n	%
30-35 years	1	0.3	0	0.0
25-30 years	0	0.0	0	0.0
20-25 years	4	1.4	2	0.4
15-20 years	12	4.1	5	1.0
10-15 years	23	7.8	9	1.8
9-10 years	7	2.4	2	0.4
8-9 years	10	3.4	3	0.6
7-8 years	5	1.7	4	0.8
6-7 years	3	1.0	3	0.6
5-6 years	0	0.0	5	1.0
4-5 years	1	0.3	9	1.8
3-4 years	1	0.3	12	2.4
2-3 years	9	3.1	14	2.9
1-2 years	114	38.9	164	33.4
	190	64.7	232	47.2

Length of Service	Males (N=90)		Females (N=259)	
	n	%	n	%
11-12 months	1	0.3	10	2.0
10-11 months	2	0.7	8	1.6
9-10 months	0	0.0	7	1.4
8-9 months	0	0.0	3	0.6
7-8 months	1	0.3	7	1.4
6-7 months	1	0.3	15	3.0
5-6 months	9	3.1	24	4.9
4-5 months	28	9.6	54	11.0
3-4 months	7	2.4	56	11.4
2-3 months	7	2.4	53	10.8
1-2 months	34	11.6	14	2.8
0-1 month	0	0.0	8	1.6
	90	30.7	259	52.5
Not Ascertained	13	4.4	--	--

Table 3. Distribution of the Samples by Primary MOS

MOS	Males (N=293)		Females (N=491)	
	n	(%)[a]	n	(%)[b]
Infantry	29	10.1	—	0.0
Field Artillery	2	0.7	2	0.4
Land Combat and Air Defense System Intermediate Maint.	2	0.7	—	0.0
Communications/Electronics Maint.	7	2.4	—	0.0
Communications/Electronics Operations	18	6.3	1	0.2
General Engineering	2	0.7	—	0.0
Chemical	4	1.4	2	0.4
Ammunition	1	0.3	—	0.0
Mechanical Maintenance	7	2.4	2	0.4
Transportation	4	1.4	11	2.4
Aircraft Maintenance	4	1.4	2	0.4
Administration	175	61.0	390	85.0
Automatic Data Processing	—	0.0	2	0.4
Supply and Service	11	3.8	14	3.0
Recruitment and Reenlistment	1	0.3	—	0.0
Public Affairs and Audio-Visual	—	0.0	1	0.2
Medical	13	4.5	32	7.0
Food Service	3	1.0	—	0.0
Military Intelligence	3	1.0	—	0.0
Electronic Warfare/ Cryptologic Operations	1	0.3	—	0.0
	287	99.7	459	99.8
MOS Not Ascertained	2		25	
Officers	4		7	

[a] Percents calculated on N=287.

[b] Percents calculated on N=459.

6

Demographic Information

Distribution by Age

Table 4 presents male and female distributions by age category, mean age of each gender, and, for comparative purposes, age distribution of the active duty Army as of June, 1988. The distributions of the Fort Jackson males and females differ most in the 21-24 year age category, which has relatively more females than males, and in the 31 years and over age category, which favors the males. However, although the mean age of males is slightly higher than the mean age of females, the difference between the two is not statistically significant (t=1.64, p≤ 0.05).

A comparison of the age distribution of the Fort Jackson test sample with the 1988 Army-wide data shows that the ≤20 year age group of both males and females is greatly overrepresented in the test sample. Indeed, approximately 62% of the males and 57% of the females in the test sample fall into this age category as compared to approximately 21% of the male and 20% of the female active duty force. Conversely, the other three age groups are underrepresented in the test sample as compared to the active duty force. The relative youth of the Fort Jackson sample is consistent with the predominant rank and MOS status of the subjects reported above.

Table 4. Distribution of the Samples by Age Category

Age Category	Males (N=293)		Army Males– Jun 88[a] (%)	Females (N=491)		Army Females– Jun 88[b] (%)
	n	(%)		n	(%)	
≤ 20	182	62.1	17.6	282	57.4	16.4
21-24	37	12.6	26.8	117	23.8	29.9
25-30	39	13.3	25.3	61	12.4	32.1
≥ 31	35	11.9	30.3	31	6.3	21.7
Mean Age	22.3	—	—	21.6	—	—
Std. Dev.	6.3	—	—	4.8	—	—

[a]N = 667,298

[b]N = 81,486

Distribution by Racial Category

The distribution of the male and female test samples by racial group is presented in Tables 5 and 6, respectively, along with comparative data for the active duty force of June, 1988. It should be mentioned that the racial categories presented in Tables 5 and 6 are not exactly the same as those presented in the Biographical Survey which was administered to the Fort Jackson subjects (Appendix). The racial categories in the Biographical Survey were White, Black, Asian, Pacific Islander, and American Indian. The categories in Tables 5 and 6 are White, Black, Hispanic, a combined American Indian/Alaskan Native category, and a combined Asian/Pacific Islander category. These categories conform to standard racial categories commonly utilized by the Army. The creation of the Hispanic and the two combined categories was possible because the Biographical Survey also had an extensive list of choices for ethnicity.

Table 5. Distribution of the Male Sample by Racial Group

Racial Category	Army Males n	Males (N=293) (%)	Jun 88[*] (%)
White	178	60.7	66.2
Black	78	26.6	25.9
Hispanic	24	8.2	3.9
Asian/Pacific Islander	9	3.1	1.5
American Indian/Alaskan Native	4	1.4	0.5
Mixed/Other[**]	–	–	2.0

[*]N = 667,298
[**]Not an alternative category in the Fort Jackson study

A comparison of the racial distribution of the male test sample with the racial distribution of the male active duty force shows that the percentage of Blacks in the test sample (26.6%) is nearly the same as the percentage of Blacks in the active duty force (25.9%). However, the percentage of Whites in the test sample (60.7%) underrepresents the percentage of Whites (66.2%) in the active duty force by about 5%. Conversely, the percentage of Hispanics in the test sample (8.2%) is about twice the percentage of

Hispanics in the active duty force (3.9%). The remaining two categories are also slightly overrepresented in the test sample. Also, as indicated, the Fort Jackson study did not have a Mixed/Other category.

Despite the lack of congruity between the male test sample and the male active duty force for all but the Black racial categories, the test subjects were not resampled to more accurately reflect the male distribution of the active duty force for two reasons. First, the differences did not seem excessive, and, at least in the case of the overrepresented Hispanics, the active duty Army is projected to include increasingly more individuals in that category in the near future. Second, the random elimination of male subjects from the test sample as a means to bring the two distributions into closer alignment would have adversely reduced not only the overall male sample size but also the sample sizes of males in the less-represented racial categories.

Table 6. Distribution of the Female Sample by Racial Group

Racial Category	Original Sample (N=574)		Jun 88[*]	Current Sample (N=491)	
	n	(%)	(%)	n	(%)
White	253	44.1	51.7	253	51.5
Black	273	47.6	41.8	194	39.5
Hispanic	34	5.9	2.6	30	6.1
Asian/Pacific Islander	8	1.4	1.5	8	1.6
American Indian/Alaskan Native	6	1.0	0.6	6	1.2
Mixed/Other[**]	–	–	1.9	–	–

[*]N = 81,486
[**]Not an alternative category in the Fort Jackson study

It was indicated previously that the female sample in this report does not include all 574 of the subjects measured at Fort Jackson. Indeed, the original female sample was reduced to 491 individuals by randomly eliminating (using SPSS; Nie et al., 1977) 79 Blacks and 4 Hispanics from the total. This reduction was performed because the racial distribution of the original sample underrepresented Whites by 7.6% and overrepresented Blacks by 5.8% as compared to the racial distribution of the active duty Army of June, 1988 (see Table 6 above). Since preliminary analyses of the Fort Jackson foot data have shown that significant differences in foot morphology exist

between Blacks and Whites, it is important that the samples presented in this report more closely reflect the racial distribution of the current Army if the data are to be used in the design, sizing, and tariffing of contemporary Army footwear.

A comparison of the racial distribution of the current female sample with the active duty force shows that the resampling procedure brought both Blacks and Whites into much closer compliance with the active duty Army. As among the males, the percentage of Hispanics in the female sample is still overrepresented by approximately 3% in spite of the reduction of the female sample. Both the American Indian/Alaskan Native category and the Asian/Pacific Islander category differ negligibly from the corresponding distributions in the current female sample. Again, because the ratio of Hispanics in the Army is projected to increase in the near future, their overrepresentation in the current female sample does not jeopardize the utility of the female data for application in the sizing and design of contemporary footwear.

Personal Information

Distribution by Handedness

The distribution of the male and female Fort Jackson samples by handedness is presented in Table 7 and compared to handedness information from the 1988 U.S. Army Working Data Base (Gordon et al., 1989), which is demographically configured to represent the June 1988 active duty Army. In the Fort Jackson survey, each subject reported whether he/she was righthanded, lefthanded, or ambidextrous. The comparative handedness data from the 1988 data base are based on subject response to a question pertaining to which hand is used for writing. The category of "either" referred to a person's ability to write with either hand and is used to correspond to the ambidextrous category from the Fort Jackson survey.

Comparison of the male sample distribution with the 1988 data shows that righthanders and lefthanders are underrepresented by approximately 3% and 4%, respectively, but that the ambidextrous category is greatly overrepresented by approximately 7%. Similarly, for the females, the Fort Jackson righthanders and lefthanders are underrepresented by approximately 2% as compared to the corresponding 1988 percentages, and the ambidextrous category is overrepresented by approximately 4%.

The preponderance of ambidextrous individuals in the Fort Jackson sample is not readily explainable. The data could suggest that the number of ambidextrous men and women who have joined the Army has dramatically decreased since 1985, although this is unlikely. Another more likely possibility is that the soldiers' perceptions of what constitutes a truly ambidextrous person were erroneous. A third possibility is that these data are simply an artifact of sampling; that is, the high frequency of ambidextrous individuals occurred by chance.

10

Table 7. Distribution of the Samples by Handedness

Handedness	Male (N=293) n	(%)	Army Males 1988[a] (%)	Females (N=491) n	(%)	Army Females 1988[b] (%)
Right	248	84.6	87.9	426	86.8	88.7
Left	23	7.8	11.4	42	8.6	10.2
Ambidextrous	22	7.5	0.6	23	4.7	1.0
Unascertained	0	--	0.1	0	--	0.1

[a]N = 1,774

[b]N = 2,208

Distribution by Frequency of Broken Bone

Table 8 presents the distribution of the sample for frequencies of broken legs, ankles, foot bones, and toes as reported by the subjects. The values refer to the number and percentages of individuals who indicated they had experienced broken bones in each category. Among males, broken ankles occurred most frequently (approximately 8%), followed by occurrences of broken legs (6.5%) and broken foot bones (5.5%). The great toe of both feet was the most frequently occurring broken toe (2.7% for right and left). The frequency of males with broken toes other than the great toe was consistently less than 1%.

The female frequencies followed the same pattern as the males. Broken ankles (4.5%) occurred most frequently, followed by broken legs (1.6%) and broken foot bones (2.4%). Again, the most frequently occurring broken toe was the great toe (right = 2%; left = 1.4%), and the frequency of occurrence for any of the other toes never exceeded 1%, except the right fifth toe which was 1.4%.

A comparison of the male versus female frequencies shows that males experienced more occurrences of broken bones in all categories except for the second through fifth toe of the right foot. The fact that males have higher frequencies of broken bones than females possibly reflects more rigorous levels of physical activity among males.

11

Table 8. Distribution of the Samples by Broken Bone

Bone	Males (N=293) n	(%)	Females (N=491) n	(%)
Broken Leg				
Right	11	3.8	6	1.2
Left	7	2.4	7	1.4
Both	1	0.3	0	—
None	274	93.5	478	97.4
Broken Ankle				
Right	11	3.8	14	2.9
Left	9	3.1	8	1.6
Both	4	1.4	0	—
None	269	91.8	469	95.5
Broken Foot Bone				
Right	9	3.1	7	1.4
Left	5	1.7	5	1.0
Both	2	0.7	0	—
None	277	94.5	479	97.6
Broken Toe – Right 1				
Yes	8	2.7	10	2.0
No	285	97.3	481	98.0
Broken Toe – Right 2				
Yes	2	0.7	5	1.0
No	291	99.3	486	99.0
Broken Toe – Right 3				
Yes	1	0.3	4	0.8
No	292	99.7	487	99.2
Broken Toe – Right 4				
Yes	2	0.7	5	1.0
No	291	99.3	486	99.0
Broken Toe – Right 5				
Yes	2	0.7	7	1.4
No	291	99.3	484	98.6

Table 8. Distribution of the Samples by Broken Bone (Continued)

Bone	Males (N=293)		Females (N=491)	
	n	(%)	n	(%)
Broken Toe - Left 1				
Yes	8	2.7	7	1.4
No	285	97.3	484	98.6
Broken Toe - Left 2				
Yes	2	0.7	1	0.2
No	291	99.3	490	99.8
Broken Toe - Left 3				
Yes	2	0.7	---	---
No	291	99.3	491	100.0
Broken Toe - Left 4				
Yes	2	0.7	1	0.2
No	291	99.3	490	99.8
Broken Toe - Left 5				
Yes	3	1.0	0	---
No	290	99.0	491	100.0

Distribution by Highest Toe and Longest Toe

Table 9 presents the distribution of the sample by highest toe on the right foot only and by the longest toe on each foot. The highest toe pertains to the second through fifth toes and was used for the measurement of Maximum Toe Height (VAR 10). For both males and females, the second toe was by far most frequently the highest, followed by the third, fourth and fifth, in that order.

The longest toe, invariably the first or second, was used for measuring Foot Length of the right foot (VAR 25) and left foot (VAR 30). In males, the frequency for the first toe was approximately 88% on both the right and left foot. In females, the higher frequency also occurred for the first toe on both the right foot (approximately 93%) and left foot (approximately 91%).

13

Table 9. Distribution of the Samples by Highest Toe (Right Foot), Longest Toe (Right Foot), and Longest Toe (Left Foot)

Toe	Males (N=293)		Females (N=491)	
	n	(%)	n	(%)
Highest Toe[a]				
Second	192	65.5	358	72.9
Third	51	17.4	78	15.9
Fourth	27	9.2	34	6.9
Fifth	23	7.8	21	4.3
Longest Toe, Right Foot[b]				
First	258	88.1	456	92.6
Second	35	11.9	35	7.1
Longest Toe, Left Foot[c]				
First	258	88.1	446	90.8
Second	35	11.9	45	9.2

[a] Toe with highest dorsal surface – Used for measurement of Maximum Toe Height.

[b] Most protruding toe on the right foot – Used for measurement of Foot Length, Right.

[c] Most protruding toe on the left foot – Used for measurement of Foot Length, Left.

Chapter II

METHODOLOGICAL CONSIDERATIONS

The Variables

A total of 33 anthropometric measurements were obtained on each subject. These included 26 dimensions of the right foot and lower leg, 5 dimensions of the left foot, and stature and weight. While all measurements are described in detail in Chapter III, a listing of each of the measurement names and the respective designated variable numbers is as follows:

VAR1	Stature	VAR18	BOF Breadth, Diagonal
VAR2	Calf Height	VAR19	Heel Breadth, Left
VAR3	Ankle Height	VAR20	BOF Circumference, Left
VAR4	Medial Malleolus Height	VAR21	Weight
VAR5	Lateral Malleolus Height	VAR22	Ankle Length
VAR6	Dorsal Arch Height	VAR23	Instep Length
VAR7	Plantar Arch Height	VAR24	BOF Length, Right
VAR8	BOF Height	VAR25	Foot Length, Right
VAR9	1st Toe Height	VAR26	BOF Breadth, Horizontal, Right
VAR10	Maximum Toe Height	VAR27	Outside BOF Length
VAR11	Outside BOF Height	VAR28	5th Toe Length
VAR12	Calf Circumference	VAR29	BOF Length, Left
VAR13	Ankle Circumference	VAR30	Foot Length, Left
VAR14	Heel-Ankle Circumference	VAR31	BOF Breadth, Horizontal, Left
VAR15	Instep Circumference	VAR32	Bimalleolar Breadth
VAR16	BOF Circumference, Right	VAR33	1st-3rd Toe Breadth
VAR17	Heel Breadth, Right		

It should be mentioned that because of space considerations in certain places in the report it was necessary to occasionally abbreviate parts of variable names (for example, "circumference" is occasionally abbreviated to "circum"). One abbreviation that will be used very frequently throughout the report is "BOF" in place of "Ball of Foot".

Procedural Considerations

Processing the Subjects

Prior to being measured, subjects were briefed by the measuring team leader about the purpose of the study, their rights of privacy and disclosure of information (See Appendix A), and general procedures of the measurement process. Additionally, they were asked to fill out a biographical questionnaire (Appendix A). Upon completion of the biographical questionnaire, subjects were asked to remove their footwear and roll up their trousers to just below the knees. Each was provided with a pair of disposable hospital slippers for use when walking about in the measuring areas.

Before a subject was measured, it was first necessary to locate and then mark specific anthropometric landmarks of both feet and the right leg of each subject. A black eyebrow pencil was used for this purpose. (These landmarks are described in the section on Anthropometric Considerations, p. 18.) To ensure consistency in the position of the marks throughout the study, one worker served as the primary marker for the duration of the study. It also should be noted that, while one of the primary measurers was trained as an alternate marker, the primary marker was not absent during any of the time subjects were being processed.

Once marked, subjects were directed toward one of three measuring stations, each of which was manned by two trained measuring technicians. While one measured the other served as a recorder. To prevent fatigue, the two would reverse roles approximately every other subject. In the event of absence of one of the two measurers at any station, a trained alternate who was involved in the boot fit portion of the study would fill in until the primary measurer returned to duty. During the few times this occurred, the alternate functioned as the recorder while at the measuring station.

For the most part, an individual station was designed to include similar types of measurements requiring the same measuring instruments: at Station 1, foot and leg heights, stature, and weight were taken; at Station 2, foot and leg circumferences predominated; and at Station 3, foot lengths and breadths were measured. The measurement record showing the respective measurements for each station is presented in the Appendix. With the exception of stature and weight, measurements were taken in the order provided on the form.

Regardless of the measuring station where a subject began, a forward rotation was always followed so the flow of subjects could be regulated. For example, if a subject started at station 2, he/she would next go to Station 3 then on to Station 1. Finally, once subjects had completed all phases of the boot fit study, including measurement, they were directed to the briefing area so that all forms could be checked for completeness and so subjects could remove the marks on their feet and legs.

Processing the Data

The foot data collected at Fort Jackson were keypunched onto magnetic tape by personnel at Natick's central computer facility. A working data set was then copied from tape to magnetic disk for use at remote terminals.

Before generating the statistical information, it was necessary to screen the data for erroneous values which lie beyond the range of normal variation for each variable. Outlying values may result from mistaken instrument readings during measurement, faulty transcription of the measurement by the recorder, or keypunch errors when transferring the data to magnetic tape. The extreme values were identified from frequency and range data generated by the Frequency procedure of the Statistical Package for Social Sciences (SPSS) (Nie, et al., 1975), and then were checked against the original data entries on the measurement records. Obvious reading, recording, and keypunch errors were changed in the data file to reflect the proper values. It must be emphasized that a conservative approach was taken in changing discrepant values; that is, if any question of accuracy arose for a particular value and could not be resolved by reviewing the original entries, it was coded as missing data in the data file.

Once the "clean" data set had been established, the basic statistics were computed for each variable by gender. Computation of the univariate statistics was facilitated by several programs and/or subroutines generously provided by the Anthropology Research Project (ARP) of Yellow Springs, Ohio. Two of these programs in particular, XVAL (= extreme value) and MSDP (= mean, standard deviation, and percentiles), were utilized to produce all the basic statistics presented in Chapter IV. Specific details of the mechanics of these programs and other subroutines necessary to produce the basic statistics can be found in Kikta and Churchill (1978) and in the technical reports for anthropometric surveys of U.S. Army men (White and Churchill, 1971) and U.S. Army women (Churchill et al., 1977). However, two important aspects of these programs require mention. First, although the original measurements were recorded in millimeters, the ARP programs convert the values to centimeters by multiplying each by 0.1; similarly, weight was recorded in hectograms and converted to kilograms. Second, the programs convert the metric values to inches by multiplying each by 0.3937; (weight is converted to pounds by using 2.2046 as the multiplier). As a result, the output in Chapter III is presented in both centimeters and inches.

Finally, various procedures of SPSS were employed to generate bivariate frequency data, correlation coefficients, simple regression equations, and multiple regression equations. Details of each of these statistical procedures are discussed in the following sections of this report.

17

Anthropometric Considerations

Posture and Positioning

A critical requirement of any anthropometric survey is to ensure that subject posture and position of the body are consistent throughout the duration of the study. By applying the same standards to all subjects, differences in body dimensions are attributable with greater certainty to actual differences in body size rather than to differences resulting from inconsistent postures and positions.

Since the majority of the measurements in this study are for the feet, it was most critical that the subjects stand erect with weight equally distributed on both feet, and with the trunk and legs straight but not rigidly locked. The arms were to hang straight, but loosely, at the sides of the body with the palms alongside, but not touching, the thighs. Depending on the measurement, heels were positioned approximately 10 cm apart or were brought together as much as possible. Subjects were asked to look straight ahead so that the body would not move in conjunction with a shifting line of vision. When the line of vision is parallel to the plane of the standing surface, the head is considered to be in the Frankfort plane. In essence, the posture the subjects were asked to assume was similar to that of the position of military attention, but without the stiffness and bracing which is often associated with it.

Anthropometric Landmarks

As stated previously, prior to measuring a subject it was first necessary to locate and mark several anatomical landmarks which served as reference points for the measurers. While being marked, a subject assumed the same basic posture as that previously mentioned for measuring, and placed his/her feet approximately 10 cm apart with weight equally distributed on both feet. All marks were made on the right foot and leg unless noted otherwise in the landmark definitions presented below. The landmarks are depicted in Figure 1.

(1) Calf Level – The level of the maximum circumference of the calf as established by measuring with a steel tape. This level is marked on the posterior calf. If maximum circumference occurs at more than one level, the lowest level is selected for marking. The mark is made along the inferior edge of the tape.

(2) Ankle Level – The level of the minimum circumference of the ankle as established by measuring with a steel tape. It is located slightly above the medial and lateral malleoli. This level is marked on the posterior ankle. If minimum circumference occurs at more than one level, the lowest level is selected for marking. The mark is made along the inferior edge of the tape.

(3) Lateral Malleolus – The level of the most lateral protrusion of the lateral malleolus as established with a marking block. If the most lateral protrusion occurs at several levels, the midpoint where the block is in contact with the surface is selected for marking.

(4) Medial Malleolus - The level of the most medial protrusion of the medial malleolus as established with a marking block. If the most medial protrusion occurs at several levels, the midpoint where the block is in contact with the surface is selected for marking.

(5) Maximum Plantar Arch Height - The most medial projection of the foot in the minimum instep circumference plane as determined by moving a plain block laterally until its vertical edge contacts the middle instep circumference plane landmark. A horizontal mark is made at this level. If the most medial projection occurs at several levels, the lowest level is selected for marking.

(6) 1st Metatarsal-Phalangeal Protrusion - The most medial aspect of the ball of the foot in the region of the first metatarsal-phalangeal joint as determined with the aid of a plain block. If maximum protrusion occurs over a wide surface, the midpoint where the block is in contact with the surface is selected for marking. Once the point is located, the mark is extended over the dorsal surface of the protrusion. This mark is made on both feet.

(7) Dorsal Junction of the Foot and Leg - A horizontal line in the deepest and longest crease of the skin produced over the extensor hallucis longus tendon when the knees and ankles are flexed and weight is equally distributed on both feet, which are approximately 10 cm apart.

(8) Minimum Instep Circumference Plane - The vertical plane of minimum instep circumference as established by measuring with a steel tape held in a vertical position. This plane is marked on the dorsal, medial and lateral aspects of the foot. The mark is made along the inferior edge of the tape.

(9) 5th Metatarsal-Phalangeal Protrusion - The most lateral aspect of the ball of the foot in the region of the 5th metatarsal-phalangeal joint as determined with the aid of a plain block. If maximum protrusion occurs over an extended surface, the midpoint where the block is in contact with the surface is selected for marking. Once the point is located, the mark is extended over the dorsal surface of the protrusion. This mark is made on both feet.

(10) Maximum Toe Height Location - The toe, other than the great toe, having the highest phalangeal surface as established with the aid of an adjustable block. The point of maximum dorsal protrusion is marked.
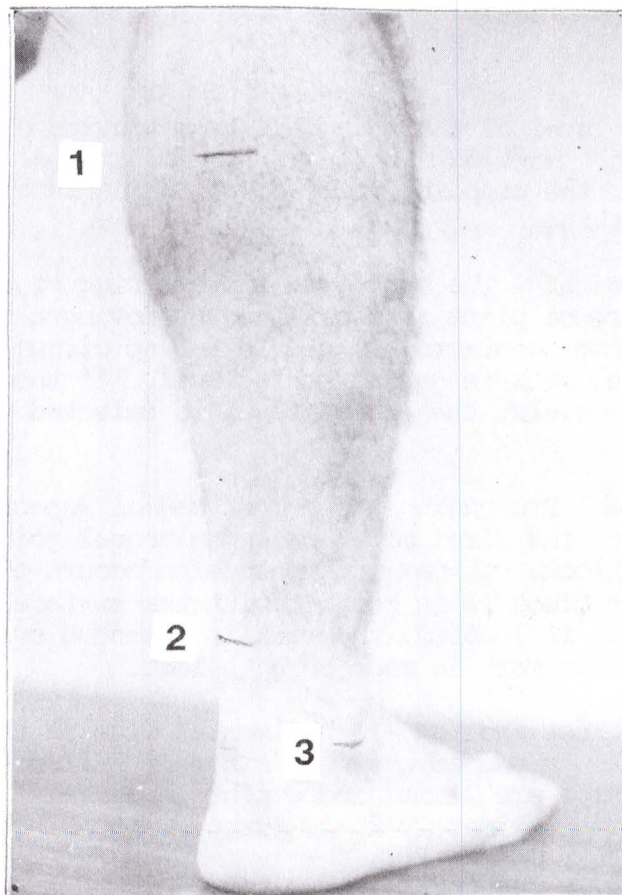
1 Calf Level (max circ)
2 Ankle Level (min circ)
3 Lateral Malleolus
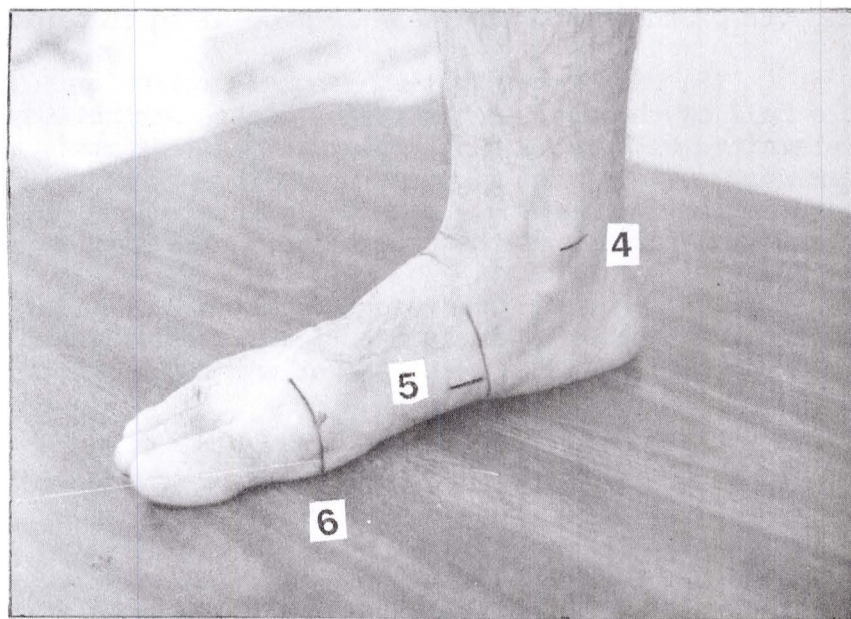
4 Medial Malleolus
5 Maximum Plantar Arch Height
6 1st Metatarsal-Phalangeal Protrusion,
  Medial Aspect

Figure 1. Measuring Landmarks
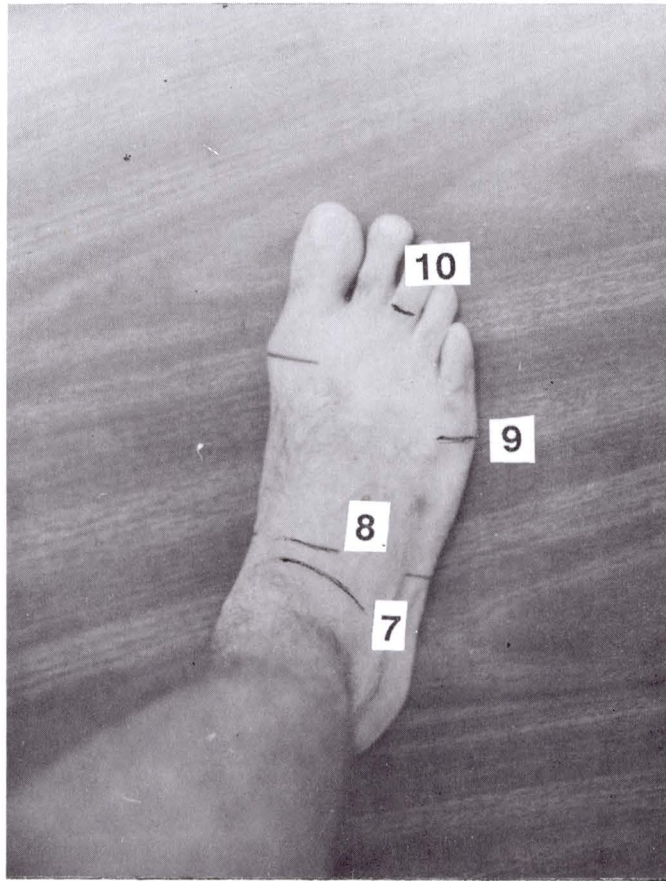
7 Dorsal Juncture of the Foot and Leg
8 Minimum Instep Circumference Plane
9 5th Metatarsal-Phalangeal Protrusion, Dorsal and Medial Aspects
10 Maximum Toe Height Location

Figure 1. Measuring Landmarks (continued)

Measuring Equipment

The items of equipment used in this study are listed below. A description of each follows the list and all are depicted in Figure 2.

Anthropometer (GPM, Martin Type)

Sliding Caliper (GPM, Martin Type)

Steel Tape (2m K&E Tip Top, Wyteface No. 860358)

Scales (NCI Model No. 5787 Digital)

Footboard, Right Foot (made at Natick)

Footboard, Left Foot (made at Natick)

Adjustable Block (made at Natick)

Plain Block (made at Natick)

Marking Blocks (made at Natick)

Eyebrow Pencil (Maybelline, Velvet Black)

This list of equipment includes several familiar anthropometric instruments and other more specialized items of equipment. Perhaps the most common is the anthropometer. The anthropometer is a versatile instrument that, because it consists of four connecting segments, can be used to measure various heights of the body. In addition, the topmost segment of the anthropometer can be converted into a large beam caliper which is useful for measuring dimensions of the body that are too large or deep for the smaller sliding caliper. In the present study, a fully configured stainless steel anthropometer was used for stature; an abbreviated version (only the bottom segment) was used for two shorter heights (calf and ankle height); and the beam caliper was used for two breadth dimensions (bimalleolar breadth and 1st-3rd toe breadth). It also should be mentioned that the standing anthropometers were firmly planted in specially designed stainless steel bases or pedestals (6" X 6" X 1/2") so that strict verticality of the anthropometers relative to the standing surface and the body could be maintained.

Three other familiar anthropometric instruments are the sliding caliper, the steel tape, and the scales. The sliding caliper, useful for measuring smaller breadths and lengths, was used in this study for the determination of heel breadth (both feet) and diagonal ball of foot breadth. The steel tape was used to measure all circumferences. Obviously, the scales were used to determine weight.
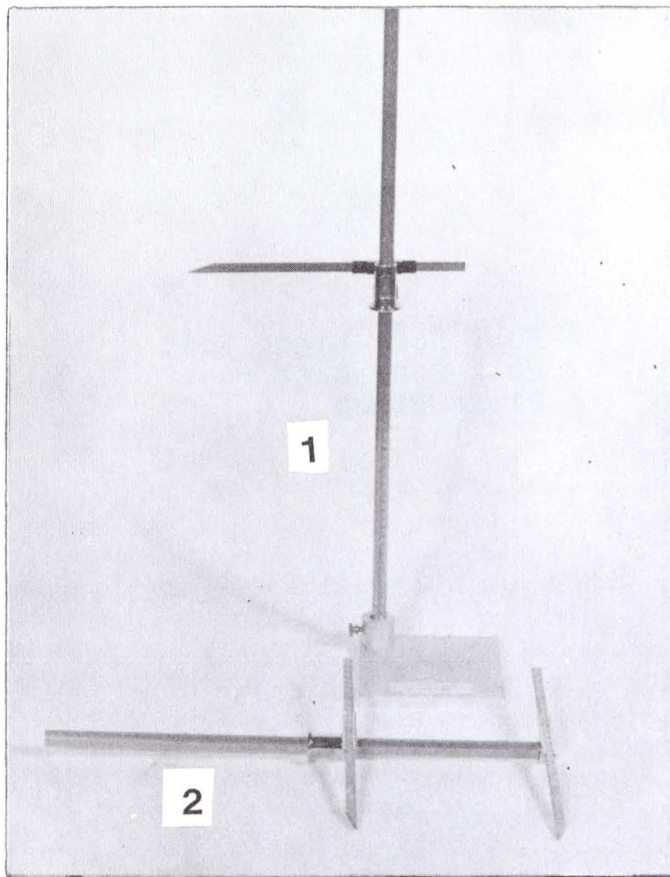
1 Anthropometer
2 Beam Caliper
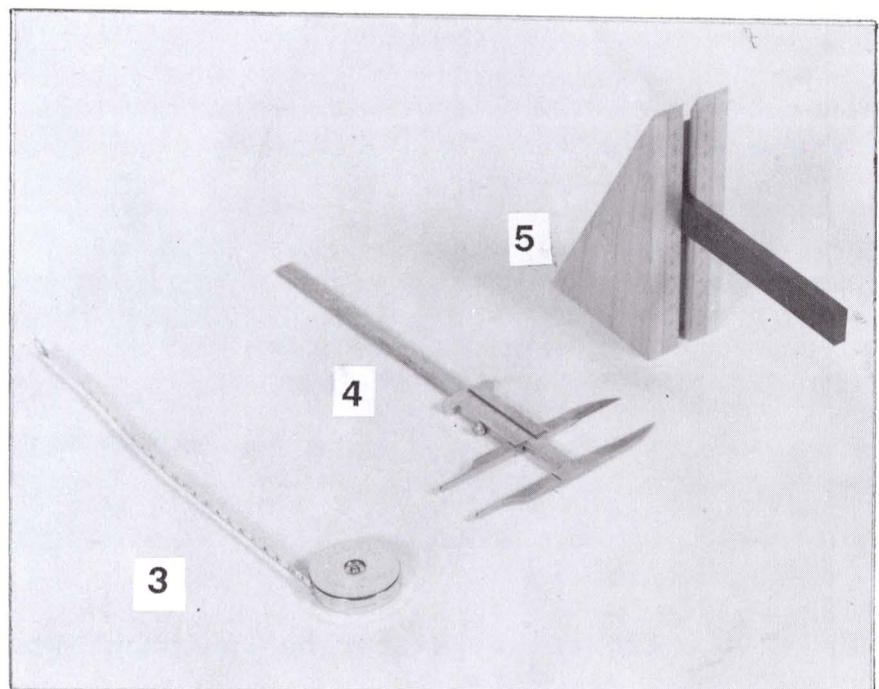
3 Steel **Tape**
4 Sliding Caliper
5 Adjustable Block

Figure 2.   Measuring Equipment
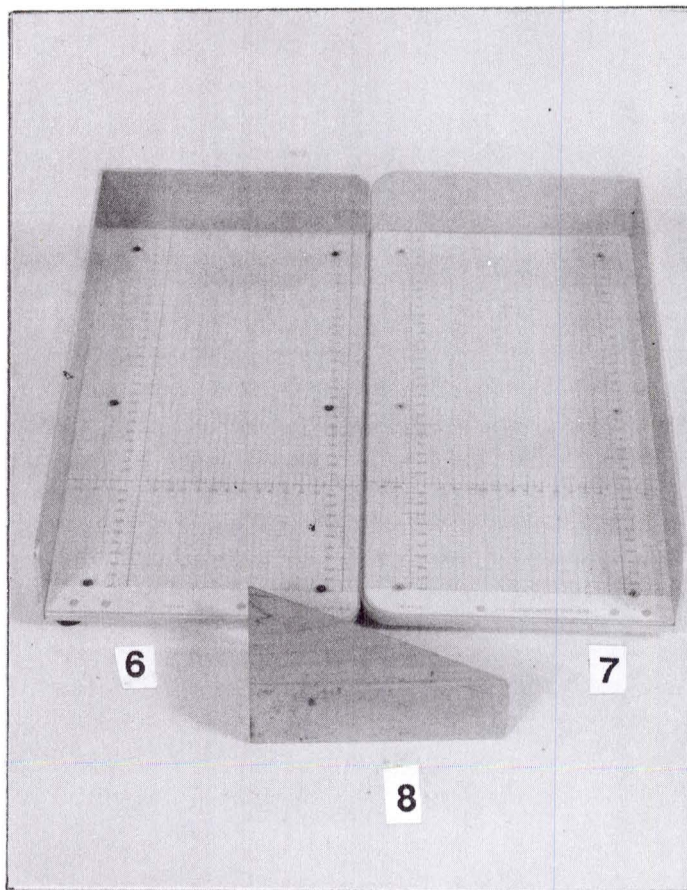
6 Foot Box, Right Foot
7 Foot Box, Left Foot
8 Plain Block
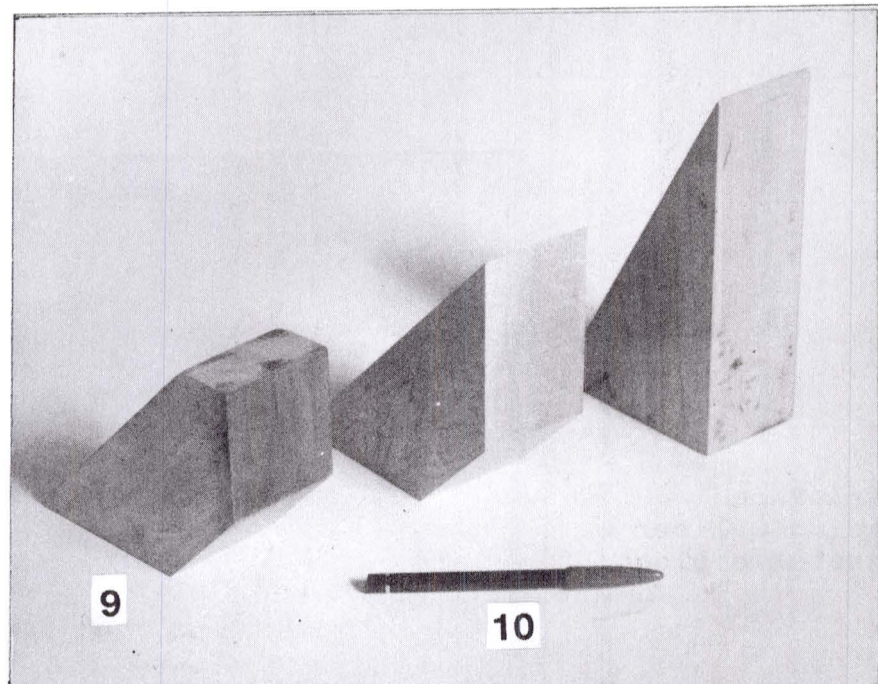
9 Marking Blocks
10 Eyebrow Pencil

Figure 2.   Measuring Equipment (continued)

Two of the more specialized items of equipment employed in this study were the footboard and the adjustable block. The footboard is used expressly for measuring lengths and breadths of the foot in a quick and efficient manner. This device consists of a stainless steel tray (8" by 16"), bound on two sides by a metal side and back wall. Graph paper with both horizontal and vertical scales in millimeters covers the tray surface, and it is overlain with clear plexiglass. Measurements are obtained with the aid of a plain block. The footboard's sturdy construction easily supported the weight of all subjects measured in the study.

The adjustable block is a triangular block of wood 6-1/4" tall. On the vertical surface are two scales in millimeters bounding either side of a groove which functions as a track for a plastic arm that extends five inches from the vertical face. By manipulating the arm up or down, very low heights such as those of the foot can be obtained.

The plain block is identical in shape to the adjustable block but does not have the measuring apparatus on the long vertical side. In addition to its use with the footboard, the plain block was used along with the marking block to determine various landmarks of the feet. The marking block is more irregularly shaped than the plain block, and it was indispensable for obtaining landmarks of the ankle on a large number of subjects.

Finally, the black eyebrow pencil was used to make the marks on the feet and legs. The particular pencil noted above was chosen for use because the marking substance is highly visible on most variants of skin pigmentation, it does not smudge easily, and it can be removed easily.

Data Integrity

One of the premier challenges facing any anthropometric survey is the maintenance of consistency and reliability in the data. As indicated in the discussions above, sources of error in measurement data can occur for a variety of reasons including inconsistent landmarks, inconsistent positioning of subjects, whether being marked or measured, erroneous reading of instruments, faulty recording of the measurements, and errors in transcription from hardcopy to computer format. From the preceding discussions it is also evident that efforts were taken to minimize these sources of error. To reiterate, landmarks were made by only one marker, subject positioning was consistent throughout the study, and outlying values were identified and altered or removed.

Other critical sources of error may occur in the measurement process itself. For example, intraobserver error may occur when a single measurer alters his/her measuring technique over the course of a study or even over the course of a day. Measurement error between two individuals who take the same measurements, interobserver error, may occur when one or both deviate from an established measurement technique. In this study preventative measures were taken to minimize both intraobserver and interobserver error as much as possible. For example, prior to commencement of the study a full work week was spent familiarizing members of the measuring team with all of the measurements

(i.e., via numerous measuring sessions). The team members were then assigned to one of the three measuring stations based on their proficiency and consistency, and spent essentially another work week standardizing their technique on their particular suite of measurements. A standardization session was then conducted once in each of the five weeks that the data were collected. In the standardization sessions several selected subjects were measured by each of the measurers for all dimensions to assess whether measuring techniques were consistent among the measurers.

During the days when sufficient numbers of subjects were being measured, the team leader would randomly select several subjects for remeasurement over the course of the day. Enough subjects were sent back for remeasurement until sufficient intraobserver and interobserver repeatability data for each of the team members had been obtained. This procedure, which was ordinarily conducted on a daily basis, also provided for a frequent check of degradation in measurement accuracy among the measurers.

Presented in Table 10 are mean absolute differences for the intraobserver and interobserver errors for each variable. Mean absolute differences are computed by summing the differences between the first and second measurement, regardless of which is larger or smaller, and then dividing by the number of times error data were collected. Mean absolute differences for intraobserver error thus provide some indication as to how consistent measurers are from one subject to the next. As can be seen, consistency among the measurers varied from measurement to measurement. A comparison of mean absolute differences for certain measurements taken in this study with those for the same measurements obtained in the recent anthropometric survey of Army personnel (ANSUR) shows that the Fort Jackson data are well within acceptable error rates established for ANSUR (see Clauser et al., 1988).

Table 10. Mean Absolute Differences for Observer Errors

Variable No. & Name	Intraobserver Error		Interobserver Error
	Measurer One	Measurer Two	
Station 1			
1 Stature	3.40*	3.10	5.04
2 Calf Height	1.55	1.65	1.44
3 Ankle Height	1.30	0.90	1.52
4 Medial Malleolus Height	0.45	1.25	1.09
5 Lateral Malleolus Height	0.80	1.25	1.00
6 Dorsal Arch Height	1.15	1.45	2.13
7 Plantar Arch Height	0.95	1.05	1.39
8 BOF Height	0.50	0.35	0.78
9 1st Toe Height	0.85	1.20	0.87
10 Maximum Toe Height	0.75	0.55	0.78
11 Outside BOF Height	0.55	0.50	0.96
Station 2			
12 Calf Circumference	1.20	2.05	1.55
13 Ankle Circumference	1.30	1.35	2.05
14 Heel-Ankle Circumference	1.60	1.53	2.14
15 Instep Circumference	1.65	1.05	1.32
16 BOF Circumference,Right	1.60	1.80	2.18
17 Heel Breadth,Right	0.55	0.60	1.00
18 BOF Breadth,Diagonal	0.95	0.70	1.14
19 Heel Breadth,Left	0.60	0.80	0.86
20 BOF Circumference,Left	1.60	1.45	2.82
Station 3			
22 Ankle Length	3.35	1.35	2.67
23 Instep Length	2.65	1.91	1.76
24 BOF Length,Right	2.70	2.78	1.24
25 Foot Length,Right	1.60	1.55	1.24
26 BOF Breadth,Horiz,Right	1.65	1.36	2.48
27 Outside BOF Length	2.60	2.61	2.38
28 5th Toe Length	1.95	2.76	2.05
29 BOF Length,Left	2.85	2.04	2.71
30 Foot Length,Left	1.35	2.77	2.10
31 BOF Breadth,Horiz,Left	2.95	1.04	1.71
32 Bimalleolar Breadth	1.40	0.83	0.95
33 1st-3rd Toe Breadth	1.90	1.70	2.29

*All values in millimeters

27

Chapter III

UNIVARIATE STATISTICS AND MEASURING TECHNIQUES

Statistical Measures

Anthropometric surveys characteristically involve a large number of measurements taken on a large sample of subjects from a given population. In order to fully understand such large data sets and apply the information in different contexts, it is necessary to condense the data into a variety of meaningful summary statistics. Even though the data set in this report involves only 33 variables taken on fewer than 900 individuals, both quantities being far smaller than those from a large-scale survey, the information would have little utility unless summarized.

For a number of years, anthropometric survey reports of the U.S. Armed Forces traditionally have included a specific set of univariate statistics, which have proven to be extremely useful in various contexts. In keeping with tradition, these same summary statistics are included in this report for the foot and lower leg data (stature and weight also included). Presented below are descriptions of the traditional statistical measures. All statistical descriptions were derived from the statistic texts of Sokal and Rohlf (1981) and Hays (1981) and from reports for previous anthropometric surveys (White and Churchill, 1971; Clauser et al., 1972; Churchill et al., 1977). The statistical measures are as follows:

(1) The Arithmetic Mean – Familiarly called the "mean" or "average", the arithmetic mean is the most common of several measures of central tendency for a distribution of numerical values. It is derived by summing a set of values and then dividing by the total number of observations. For example, the sum of all right foot length values for the 491 women in this study is 11,970.58 cm, and the mean ($\bar{X}$) is:

$$\bar{X} = \frac{\Sigma X}{N} = \frac{11,970.58}{491} = 24.38$$

where X = each value of foot length, and N = the number of observations.

(2) The Median – Another measure of central tendency, the median is the middle value in an ordered array of numbers. As such, 50% of all values fall above the median and 50% fall below. Thus, it is the same as the 50th percentile value in each of the percentile tables.

(3) The Standard Deviation - The standard deviation is a measure of dispersion or variability about the mean of a distribution of values. It is defined as the square root of the variance, that is, the square root of the average squared deviations from the mean. The formula for the standard deviation is:

$$SD = \sqrt{\frac{\Sigma(X-\overline{X})^2}{N}}$$

where SD is the standard deviation, X is each value, $\overline{X}$ is the mean, and N is the number of values.

In considering the standard deviation as a measure of dispersion about the mean, it follows that a standard deviation will be small if most values cluster about the mean. Conversely, if the values are considerably smaller or larger than the mean, or perhaps a combination of both, then the standard deviation will be large. In terms of the distribution of values about the mean, approximately two thirds will fall within one standard deviation above and below the mean, and about 95% of all values will fall within plus and minus two standard deviations from the mean.

(4) The Coefficient of Variation - This statistic is simply the standard deviation expressed as a percentage of the mean ($\overline{X}$). Its formula is:

$$CV = \frac{100 \cdot SD}{\overline{X}}$$

The coefficient of variation (CV) is useful for comparing the variability of a character among two or more populations which have different means for that character. Additionally, it can be used to determine whether one character is more variable than another within a given population or whether a group of anatomically similar characters within a population exhibits more variability than another group of anatomically similar characters. For example, regarding the latter application, it has been shown in other anthropometric surveys that linear dimensions, which correspond to long bone lengths, have smaller coefficients of variation than circumferential measurements, which correspond to fleshy dimensions of the body.

(5) The Standard Errors - An obvious goal of large anthropometric surveys is to provide a sampling of data that is representative of some larger population. Thus the importance of a sound sampling strategy for achieving adequate population representation should never be underemphasized. Unfortunately, the statistical measures of a sample can deviate from actual population parameters simply by chance. The standard error (SE) of any particular statistical measure, such as a sample mean for a variable, is a method to estimate the magnitude of deviation from a population parameter, in this case the population mean. In essence, a standard error is a standard deviation-type statistic which can be interpreted similarly to the distributional probabilities of the standard deviation for a single variable in a sample. In this regard, if a large number of sample means were derived from a population and were normally distributed, approximately two thirds would fall within ±1 SE of the population mean, and 95% would fall within ±2 SE.

29

Although every descriptive statistic can have an associated standard error, in this report only the standard error of the mean [SE(M)] and the standard deviation [SE(SD)] are included. The computational formulae for the standard error of the mean and the standard error of the standard deviation are:

$$SE(M) = SD/\sqrt{N}$$

$$SE(SD) = SD/\sqrt{2N}$$

(6) <u>Symmetry and Kurtosis</u> - In a normal probability distribution, each value larger than the mean will be mirrored by values smaller than the mean. In this sense the distribution is considered to be symmetrical. Departures from symmetry, called asymmetry or <u>skew</u>, suggest that a frequency curve will be more heavily weighted toward one side of the mean while the tail is drawn out to the other side. The curve is said to be skewed to the right or left depending on which direction the tail is drawn out.

Another type of departure from normality that a frequency distribution can take is <u>kurtosis</u> or peakedness. When compared to a normal cluster of observations with the same mean and variance, a kurtotic curve may be flatter (platykurtosis) with fewer values near the mean and more at the tails, or it may be taller (leptokurtosis) with more values about the mean and fewer at the tails.

For any given distribution of values, it is possible to measure the nature and degree of departure from an expected normal distribution. The particular statistics that accomplish this are called Veta I (β_1) and Veta II (β_2) in this report, the former pertaining to a measure of symmetry and the latter pertaining to a measure of kurtosis. The formulae for β_1 and β_2 are:

$$\beta_1 = \frac{\Sigma(X-\bar{X})^3}{N(SD^3)}$$

$$\beta_2 = \frac{\Sigma(X-\bar{X})^4}{N(SD^4)} - 3$$

For each of the these statistics the normal distribution values are 0. Hence, β_1 is interpreted such that a positive value indicates a skewed distribution to the right and a negative value indicates a skewed distribution to the left. A positive value of β_2 indicates leptokurtosis, and a negative β_2 indicates platykurtosis.

(7) <u>The Percentiles</u> - The percentile is a way to express a value's position in an ordered array of numbers. For example, a value at the 25th percentile indicates that 25% of all other values in the distribution are smaller than it is. Conversely, 75% of all values are larger than the value at the 25th percentile. The percentiles utilized in this report include the 1st, 2nd, 3rd, the 5th through 95th in increments of 5 (e.g., 5th, 10th, 15th, etc.), and the 97th, 98th and 99th. These percentiles are those that have been commonly reported in other U.S. military surveys.

30

(8) Frequency Table - The primary purpose of a frequency table is to arrange the values for a variable into specific intervals. In this report, the interval widths for most variables are 0.1, 0.2, or 0.3 cm. These increment widths allow the number of intervals to be between 25 and 50 in most cases.

Visual Index of the Measurements

A visual index consists of a series of line drawings which depict the dimensions measured in an anthropometric survey. By design, it is intended to provide the reader with a quick and uncomplicated reference to each of the measurements. The visual index is especially useful for those readers who are unfamiliar with the technical jargon of the measurement description.

The following Visual Index consists of six line drawings including one whole-body sketch for stature and five sketches of the foot and lower leg. The illustrations depict only right side measurements. Each of the measurements in the sketches is denoted by a number, which corresponds to the variable sequence on the original recording form and which is used to identify the variable throughout this report. The dimension names are presented either below or to the side of each sketch.
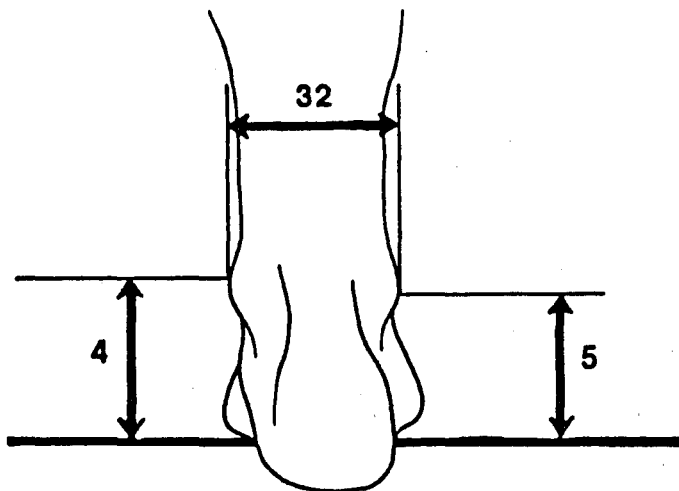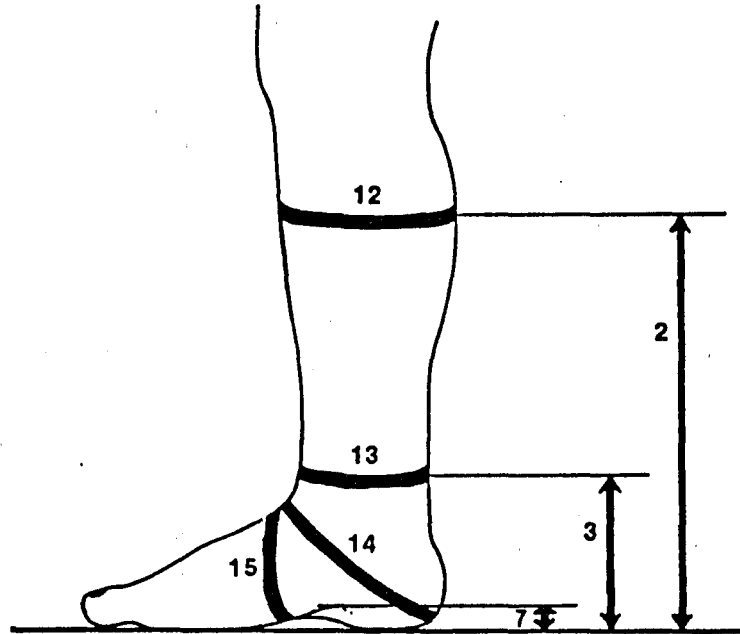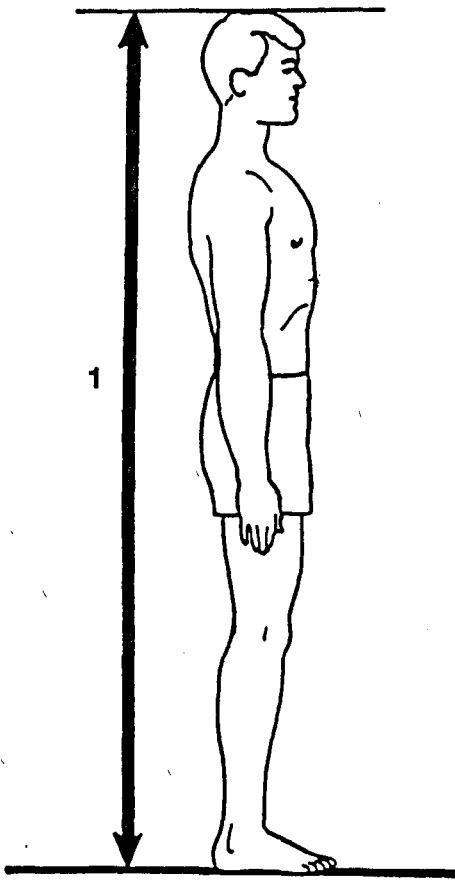
1 Stature
2 Calf Height
3 Ankle Height
4 Medial Malleolus Height
5 Lateral Malleolus Height
7 Plantar Arch Height
12 Calf Circumference
13 Ankle Circumference
14 Heel-Ankle Circumference
15 Instep Circumference
32 Bimalleolar Breadth
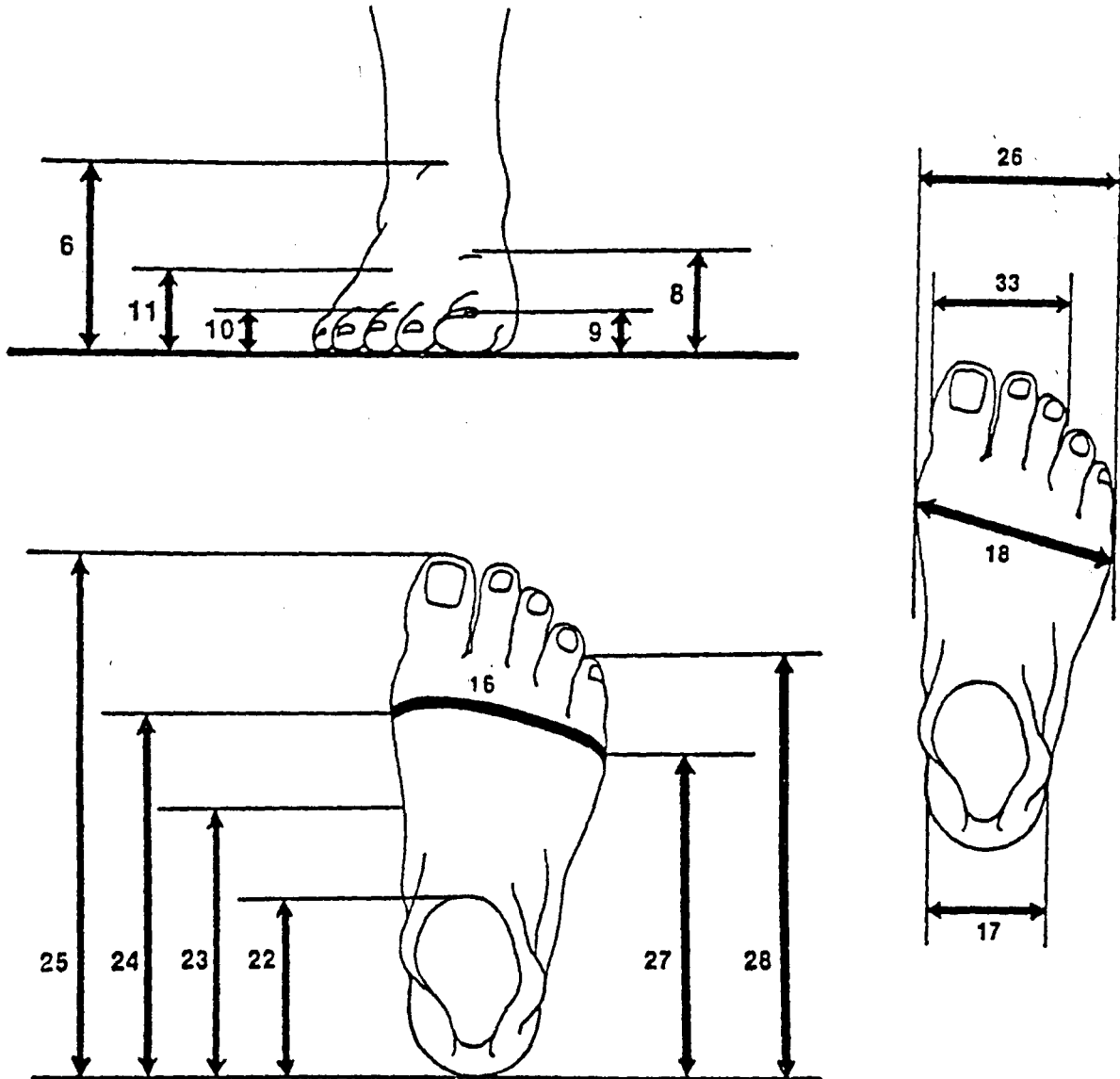
6. Dorsal Arch Height
8. Ball of Foot Height
9. First Toe Height
10. Maximum Toe Height
11. Outside Ball of Foot Height
16. Ball of Foot Circumference
17. Heel Breadth, Right
18. Ball of Foot Breadth,
    Diagonal

22. Ankle Length
23. Instep Length
24. Ball of Foot Length, Right
25. Foot Length, Right
26. Ball of Foot Breadth,
    Horizontal, Right
27. Outside Ball of Foot Length
28. 5th Toe Length
33. 1st-3rd Toe Breadth

Measurements and Data Summaries

This section presents the technical information and data summaries for the 33 measurements. The statistical data for both males and females are presented together in this section rather than in separate sections for each gender. The format of presentation was designed to first introduce the reader to each particular measurement, then follow the measurement descriptions with the statistical information. The total information for each measurement thus comprises four pages.

The first page lists the measurement number and name followed by a description of the pertinent landmark(s), the instruments used in obtaining the measurement, the position of the subject, and the actual measurement procedure. This information is then followed by a photograph depicting the measurement technique.

The second and third of the four pages present the univariate frequency tables for each measurement. Included in these tables are measurement intervals in centimeters, actual frequencies for each interval, cumulative frequencies, the frequency percentages of the total, and the cumulative percentages. By design of the programs used to generate the statistical data, the intervals for any variable never exceed 50 in number. The width of the intervals for the foot and leg dimensions vary between one and five millimeters, while the interval width for male and female Stature is set at 10 millimeters. The interval width for male and female Weight is set at 15 and 10 kilograms, respectively. The intervals should be read as the first value through the second value. For example, the interval 28.15-28.44 should be read as 28.15 through 28.44, not as 28.15 to 28.44. Accordingly, the next interval should be read as 28.45 through 28.74.

The fourth page for each measurement presents the percentile values and the summary statistics for each gender. Male data are presented on the left side of the page while female data are shown on the right side. All percentiles and appropriate summary statistics are given in centimeters and inches, except for Weight, which is presented in kilograms and pounds.

1. Stature

Landmark: None

Instrument: Anthropometer

Position of Subject: Subject stands erect, heels together with weight equally distributed on both feet, head in the Frankfort plane, and the heels, buttocks, and upper back in contact with a vertical surface (the wall).

Procedure: With the arm of the anthropometer firmly touching the scalp, measure the vertical distance from the standing surface to the top of the head in the mid sagittal plane.
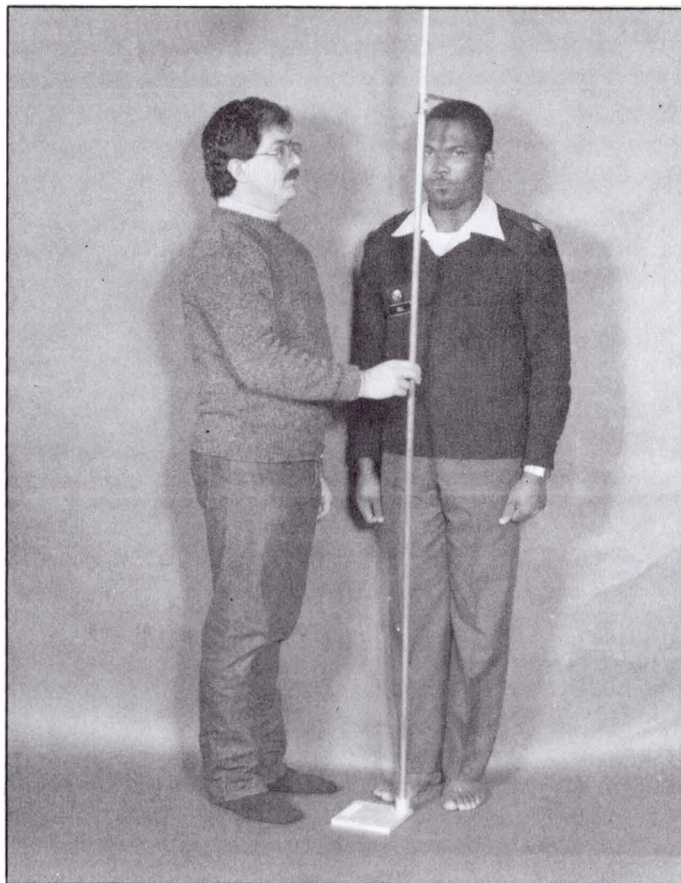
VARIABLE NO. 1--STATURE   MALE DATA

-- INTERVALS --   -- FREQUENCIES --

	ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
155.75 - 156.74	1	1	.34	.34
156.75 - 157.74	0	1	.00	.34
157.75 - 158.74	0	1	.00	.34
158.75 - 159.74	1	2	.34	.68
159.75 - 160.74	1	3	.34	1.02
160.75 - 161.74	3	6	1.02	2.05
161.75 - 162.74	4	10	1.37	3.41
162.75 - 163.74	4	14	1.37	4.78
163.75 - 164.74	2	16	.68	5.46
164.75 - 165.74	7	23	2.39	7.85
165.75 - 166.74	7	30	2.39	10.24
166.75 - 167.74	13	43	4.44	14.68
167.75 - 168.74	9	52	3.07	17.75
168.75 - 169.74	12	64	4.10	21.84
169.75 - 170.74	11	75	3.75	25.60
170.75 - 171.74	9	84	3.07	28.67
171.75 - 172.74	21	105	7.17	35.84
172.75 - 173.74	12	117	4.10	39.93
173.75 - 174.74	19	136	6.48	46.42
174.75 - 175.74	17	153	5.80	52.22
175.75 - 176.74	10	163	3.41	55.63
176.75 - 177.74	10	173	3.41	59.04
177.75 - 178.74	21	194	7.17	66.21
178.75 - 179.74	15	209	5.12	71.33
179.75 - 180.74	12	221	4.10	75.43
180.75 - 181.74	14	235	4.78	80.20
181.75 - 182.74	14	249	4.78	84.98
182.75 - 183.74	10	259	3.41	88.40
183.75 - 184.74	6	265	2.05	90.44
184.75 - 185.74	4	269	1.37	91.81
185.75 - 186.74	7	276	2.39	94.20
186.75 - 187.74	1	277	.34	94.54
187.75 - 188.74	3	280	1.02	95.56
188.75 - 189.74	0	280	.00	95.56
189.75 - 190.74	7	287	2.39	97.95
190.75 - 191.74	1	288	.34	98.29
191.75 - 192.74	2	290	.68	98.98
192.75 - 193.74	2	292	.68	99.66
193.75 - 194.74	1	293	.34	100.00

VARIABLE NO.   1--STATURE   FEMALE DATA

-- INTERVALS --   -- FREQUENCIES --

	ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
140.75 - 141.74	2	2	.41	.41
141.75 - 142.74	0	2	.00	.41
142.75 - 143.74	0	2	.00	.41
143.75 - 144.74	1	3	.20	.61
144.75 - 145.74	0	3	.00	.61
145.75 - 146.74	0	3	.00	.61
146.75 - 147.74	2	5	.41	1.02
147.75 - 148.74	2	7	.41	1.43
148.75 - 149.74	3	10	.61	2.04
149.75 - 150.74	7	17	1.43	3.46
150.75 - 151.74	14	31	2.85	6.31
151.75 - 152.74	11	42	2.24	8.55
152.75 - 153.74	14	56	2.85	11.41
153.75 - 154.74	12	68	2.44	13.85
154.75 - 155.74	14	82	2.85	16.70
155.75 - 156.74	26	108	5.30	22.00
156.75 - 157.74	31	139	6.31	28.31
157.75 - 158.74	27	166	5.50	33.81
158.75 - 159.74	23	189	4.68	38.49
159.75 - 160.74	33	222	6.72	45.21
160.75 - 161.74	24	246	4.89	50.10
161.75 - 162.74	32	278	6.52	56.62
162.75 - 163.74	23	301	4.68	61.30
163.75 - 164.74	28	329	5.70	67.01
164.75 - 165.74	24	353	4.89	71.89
165.75 - 166.74	25	378	5.09	76.99
166.75 - 167.74	21	399	4.28	81.26
167.75 - 168.74	19	418	3.87	85.13
168.75 - 169.74	15	433	3.05	88.19
169.75 - 170.74	12	445	2.44	90.63
170.75 - 171.74	8	453	1.63	92.26
171.75 - 172.74	11	464	2.24	94.50
172.75 - 173.74	6	470	1.22	95.72
173.75 - 174.74	7	477	1.43	97.15
174.75 - 175.74	4	481	.81	97.96
175.75 - 176.74	5	486	1.02	98.98
176.75 - 177.74	2	488	.41	99.39
177.75 - 178.74	2	490	.41	99.80
178.75 - 179.74	1	491	.20	100.00

VARIABLE NO. 1--STATURE

MALE DATA

* * * * *

PERCENTILES

CENTIMETERS		INCHES
160.51	1ST	63.19
161.78	2ND	63.69
162.70	3RD	64.06
164.06	5TH	64.59
166.37	10TH	65.50
168.04	15TH	66.16
169.40	20TH	66.69
170.60	25TH	67.17
171.69	30TH	67.60
172.71	35TH	68.00
173.68	40TH	68.38
174.63	45TH	68.75
175.56	50TH	69.12
176.50	55TH	69.49
177.45	60TH	69.86
178.43	65TH	70.25
179.47	70TH	70.66
180.58	75TH	71.10
181.84	80TH	71.59
183.28	85TH	72.16
185.11	90TH	72.88
187.83	95TH	73.95
189.62	97TH	74.65
190.96	98TH	75.18
193.10	99TH	76.02

* * * * *

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
175.71	MEAN	69.18
.42	SE(M)	.16
7.13	ST DEV	2.81
.29	SE(SD)	.12

* * * * *

COEFF. OF VARIATION	4.1%
SYMMETRY----VETA I	.12
KURTOSIS----VETA II	-.24

* * * * *

NUMBER OF SUBJECTS   293

FEMALE DATA

* * * * *

PERCENTILES

CENTIMETERS		INCHES
147.88	1ST	58.22
149.35	2ND	58.80
150.28	3RD	59.17
151.56	5TH	59.67
153.59	10TH	60.47
155.02	15TH	61.03
156.18	20TH	61.49
157.22	25TH	61.90
158.16	30TH	62.27
159.06	35TH	62.62
159.92	40TH	62.96
160.77	45TH	63.30
161.63	50TH	63.63
162.50	55TH	63.97
163.38	60TH	64.32
164.31	65TH	64.69
165.29	70TH	65.07
166.36	75TH	65.49
167.55	80TH	65.97
168.93	85TH	66.51
170.65	90TH	67.18
173.08	95TH	68.14
174.55	97TH	68.72
175.56	98TH	69.12
176.97	99TH	69.67

* * * * *

THE SUMMARY STATISTICS

CENTIMETERS		INCHES
161.85	MEAN	63.72
.30	SE(M)	.12
6.57	ST DEV	2.59
.21	SE(SD)	.08

* * * * *

COEFF. OF VARIATION	4.1%
SYMMETRY----VETA I	.05
KURTOSIS----VETA II	-.19

* * * * *

NUMBER OF SUBJECTS   491

2. Calf Height

Landmark: Calf level (maximum circumference)

Instrument: Anthropometer

Position of Subject: Subject stands erect, heels together, and weight distributed equally on both feet.

Procedure: With an anthropometer, measure the vertical distance from the standing surface to the middle of the calf landmark.
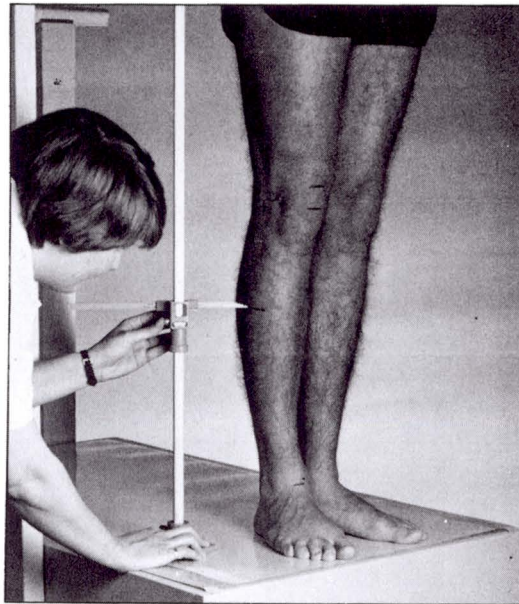
VARIABLE NO.   2--CALF HEIGHT   MALE DATA

-- INTERVALS --   -- FREQUENCIES --

	ACTUAL FREQ.	CUM.-FREQ.	PCT.-FREQ.	CUM.-PCT.-FQ.
28.15 - 28.44	1	1	.34	.34
28.45 - 28.74	0	1	.00	.34
28.75 - 29.04	2	3	.68	1.02
29.05 - 29.34	0	3	.00	1.02
29.35 - 29.64	0	3	.00	1.02
29.65 - 29.94	0	3	.00	1.02
29.95 - 30.24	3	6	1.02	2.05
30.25 - 30.54	3	9	1.02	3.07
30.55 - 30.84	4	13	1.37	4.44
30.85 - 31.14	11	24	3.75	8.19
31.15 - 31.44	7	31	2.39	10.58
31.45 - 31.74	10	41	3.41	13.99
31.75 - 32.04	6	47	2.05	16.04
32.05 - 32.34	12	59	4.10	20.14
32.35 - 32.64	11	70	3.75	23.89
32.65 - 32.94	19	89	6.48	30.38
32.95 - 33.24	10	99	3.41	33.79
33.25 - 33.54	17	116	5.80	39.59
33.55 - 33.84	13	129	4.44	44.03
33.85 - 34.14	10	139	3.41	47.44
34.15 - 34.44	24	163	8.19	55.63
34.45 - 34.74	16	179	5.46	61.09
34.75 - 35.04	16	195	5.46	66.55
35.05 - 35.34	13	208	4.44	70.99
35.35 - 35.64	11	219	3.75	74.74
35.65 - 35.94	13	232	4.44	79.18
35.95 - 36.24	13	245	4.44	83.62
36.25 - 36.54	7	252	2.39	86.01
36.55 - 36.84	10	262	3.41	89.42
36.85 - 37.14	3	265	1.02	90.44
37.15 - 37.44	0	265	.00	90.44
37.45 - 37.74	2	267	.68	91.13
37.75 - 38.04	6	273	2.05	93.17
38.05 - 38.34	2	275	.68	93.86
38.35 - 38.64	8	283	2.73	96.59
38.65 - 38.94	1	284	.34	96.93
38.95 - 39.24	1	285	.34	97.27
39.25 - 39.54	1	286	.34	97.61
39.55 - 39.84	1	287	.34	97.95
39.85 - 40.14	0	287	.00	97.95
40.15 - 40.44	1	288	.34	98.29
40.45 - 40.74	0	288	.00	98.29
40.75 - 41.04	2	290	.68	98.98
41.05 - 41.34	1	291	.34	99.32
41.35 - 41.64	0	291	.00	99.32
41.65 - 41.9.	1	292	.34	99.66
41.95 - 42.24	0	292	.00	99.66
42.25 - 42.54	1	293	.34	100.00

VARIABLE NO.   2--CALF HEIGHT   FEMALE DATA

-- INTERVALS --   -- FREQUENCIES --

		ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
24.25 -	24.74	1	1	.20	.20
24.75 -	25.24	1	2	.20	.41
25.25 -	25.74	3	5	.61	1.02
25.75 -	26.24	0	5	.00	1.02
26.25 -	26.74	1	6	.20	1.22
26.75 -	27.24	5	11	1.02	2.24
27.25 -	27.74	4	15	.82	3.06
27.75 -	28.24	16	31	3.27	6.33
28.25 -	28.74	19	50	3.88	10.20
28.75 -	29.24	27	77	5.51	15.71
29.25 -	29.74	29	106	5.92	21.63
29.75 -	30.24	35	141	7.14	28.78
30.25 -	30.74	34	175	6.94	35.71
30.75 -	31.24	38	213	7.76	43.47
31.25 -	31.74	41	254	8.37	51.84
31.75 -	32.24	36	290	7.35	59.18
32.25 -	32.74	41	331	8.37	67.55
32.75 -	33.24	35	366	7.14	74.69
33.25 -	33.74	25	391	5.10	79.80
33.75 -	34.24	22	413	4.49	84.29
34.25 -	34.74	25	438	5.10	89.39
34.75 -	35.24	14	452	2.86	92.24
35.25 -	35.74	16	468	3.27	95.51
35.75 -	36.24	8	476	1.63	97.14
36.25 -	36.74	5	481	1.02	98.16
36.75 -	37.24	5	486	1.02	99.18
37.25 -	37.74	1	487	.20	99.39
37.75 -	38.24	1	488	.20	99.59
38.25 -	38.74	0	488	.00	99.59
38.75 -	39.24	0	488	.00	99.59
39.25 -	39.74	0	488	.00	99.59
39.75 -	40.24	0	488	.00	99.59
40.25 -	40.74	1	489	.20	99.80
40.75 -	41.24	0	489	.00	99.80
41.25 -	41.74	0	489	.00	99.80
41.75 -	42.24	1	490	.20	100.00

VARIABLE NO. 2--CALF HEIGHT

MALE DATA			FEMALE DATA		
* * * * *			* * * * *		

PERCENTILES			PERCENTILES		
CENTIMETERS		INCHES	CENTIMETERS		INCHES
29.32	1ST	11.54	26.02	1ST	10.24
29.94	2ND	11.79	26.91	2ND	10.59
30.32	3RD	11.94	27.40	3RD	10.79
30.82	5TH	12.13	28.00	5TH	11.02
31.56	10TH	12.43	28.82	10TH	11.35
32.05	15TH	12.62	29.34	15TH	11.55
32.43	20TH	12.77	29.74	20TH	11.71
32.76	25TH	12.90	30.09	25TH	11.85
33.05	30TH	13.01	30.41	30TH	11.97
33.32	35TH	13.12	30.71	35TH	12.09
33.58	40TH	13.22	31.01	40TH	12.21
33.84	45TH	13.32	31.30	45TH	12.32
34.10	50TH	13.42	31.59	50TH	12.44
34.36	55TH	13.53	31.89	55TH	12.56
34.63	60TH	13.63	32.21	60TH	12.68
34.92	65TH	13.75	32.54	65TH	12.81
35.24	70TH	13.87	32.89	70TH	12.95
35.59	75TH	14.01	33.29	75TH	13.11
36.01	80TH	14.18	33.73	80TH	13.28
36.52	85TH	14.38	34.25	85TH	13.48
37.22	90TH	14.65	34.90	90TH	13.74
38.39	95TH	15.11	35.80	95TH	14.10
39.24	97TH	15.45	36.32	97TH	14.30
39.93	98TH	15.72	36.65	98TH	14.43
41.11	99TH	16.19	37.06	99TH	14.59

* * * * *			* * * * *		

THE SUMMARY STATISTICS			THE SUMMARY STATISTICS		
CENTIMETERS		INCHES	CENTIMETERS		INCHES
34.28	MEAN	13.49	31.72	MEAN	12.49
.14	SE(M)	.05	.11	SE(M)	.04
2.32	ST DEV	.91	2.41	ST DEV	.95
.10	SE(SD)	.04	.08	SE(SD)	.03

* * * * *		* * * * *	

COEFF. OF VARIATION	6.8%	COEFF. OF VARIATION	7.6%
SYMMETRY----VETA I	.51	SYMMETRY----VETA I	.23
KURTOSIS----VETA II	.60	KURTOSIS----VETA II	.40

* * * * *		* * * * *	

NUMBER OF SUBJECTS	293	NUMBER OF SUBJECTS	490

3. Ankle Height

Landmark: Ankle level (minimum circumference)

Instrument: Anthropometer

Position of Subject: Subject stands erect, heels together, and weight distributed equally on both feet.

Procedure: With an anthropometer, measure the vertical distance from the standing surface to the middle of the ankle landmark.

VARIABLE NO.   3--ANKLE HEIGHT   MALE DATA

-- INTERVALS --		-- FREQUENCIES --			
		ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
10.15 -	10.34	2	2	.68	.68
10.35 -	10.54	1	3	.34	1.02
10.55 -	10.74	2	5	.68	1.71
10.75 -	10.94	6	11	2.05	3.75
10.95 -	11.14	4	15	1.37	5.12
11.15 -	11.34	8	23	2.73	7.85
11.35 -	11.54	10	33	3.41	11.26
11.55 -	11.74	18	51	6.14	17.41
11.75 -	11.94	14	65	4.78	22.18
11.95 -	12.14	22	87	7.51	29.69
12.15 -	12.34	19	106	6.48	36.18
12.35 -	12.54	28	134	9.56	45.73
12.55 -	12.74	23	157	7.85	53.58
12.75 -	12.94	21	178	7.17	60.75
12.95 -	13.14	22	200	7.51	68.26
13.15 -	13.34	24	224	8.19	76.45
13.35 -	13.54	11	235	3.75	80.20
13.55 -	13.74	16	251	5.46	85.67
13.75 -	13.94	9	260	3.07	88.74
13.95 -	14.14	11	271	3.75	92.49
14.15 -	14.34	7	278	2.39	94.88
14.35 -	14.54	4	282	1.37	96.25
14.55 -	14.74	6	288	2.05	98.29
14.75 -	14.94	4	292	1.37	99.66
14.95 -	15.14	0	292	.00	99.66
15.15 -	15.34	1	293	.34	100.00

VARIABLE NO.   3--ANKLE HEIGHT   FEMALE DATA

-- INTERVALS --   -- FREQUENCIES --

		ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
7.95 -	8.14	1	1	.20	.20
8.15 -	8.34	1	2	.20	.41
8.35 -	8.54	0	2	.00	.41
8.55 -	8.74	5	7	1.02	1.43
8.75 -	8.94	3	10	.61	2.04
8.95 -	9.14	6	16	1.22	3.26
9.15 -	9.34	11	27	2.24	5.50
9.35 -	9.54	14	41	2.85	8.35
9.55 -	9.74	14	55	2.85	11.20
9.75 -	9.94	27	82	5.50	16.70
9.95 -	10.14	22	104	4.48	21.18
10.15 -	10.34	34	138	6.92	28.11
10.35 -	10.54	40	178	8.15	36.25
10.55 -	10.74	44	222	8.96	45.21
10.75 -	10.94	54	276	11.00	56.21
10.95 -	11.14	35	311	7.13	63.34
11.15 -	11.34	44	355	8.96	72.30
11.35 -	11.54	40	395	8.15	80.45
11.55 -	11.74	29	424	5.91	86.35
11.75 -	11.94	17	441	3.46	89.82
11.95 -	12.14	23	464	4.68	94.50
12.15 -	12.34	12	476	2.44	96.95
12.35 -	12.54	9	485	1.83	98.78
12.55 -	12.74	2	487	.41	99.19
12.75 -	12.94	1	488	.20	99.39
12.95 -	13.14	0	488	.00	99.39
13.15 -	13.34	1	489	.20	99.59
13.35 -	13.54	0	489	.00	99.59
13.55 -	13.74	1	490	.20	99.80
13.75 -	13.94	1	491	.20	100.00

VARIABLE NO. 3--ANKLE HEIGHT

MALE DATA	FEMALE DATA
* * * * *	* * * * *

PERCENTILES				PERCENTILES		
CENTIMETERS		INCHES		CENTIMETERS		INCHES
10.51	1ST	4.14		8.66	1ST	3.41
10.77	2ND	4.24		8.93	2ND	3.52
10.93	3RD	4.30		9.10	3RD	3.58
11.14	5TH	4.39		9.33	5TH	3.67
11.46	10TH	4.51		9.67	10TH	3.81
11.68	15TH	4.60		9.91	15TH	3.90
11.85	20TH	4.67		10.09	20TH	3.97
12.01	25TH	4.73		10.24	25TH	4.03
12.15	30TH	4.78		10.38	30TH	4.09
12.28	35TH	4.84		10.50	35TH	4.14
12.41	40TH	4.89		10.62	40TH	4.18
12.54	45TH	4.94		10.74	45TH	4.23
12.66	50TH	4.99		10.85	50TH	4.27
12.79	55TH	5.04		10.96	55TH	4.31
12.92	60TH	5.09		11.07	60TH	4.36
13.06	65TH	5.14		11.18	65TH	4.40
13.21	70TH	5.20		11.30	70TH	4.45
13.37	75TH	5.26		11.42	75TH	4.50
13.55	80TH	5.33		11.56	80TH	4.55
13.75	85TH	5.41		11.72	85TH	4.61
14.00	90TH	5.51		11.91	90TH	4.69
14.36	95TH	5.65		12.19	95TH	4.80
14.57	97TH	5.74		12.36	97TH	4.86
14.71	98TH	5.79		12.48	98TH	4.91
14.89	99TH	5.86		12.66	99TH	4.98

* * * * *	* * * * *

THE SUMMARY STATISTICS				THE SUMMARY STATISTICS		
CENTIMETERS		INCHES		CENTIMETERS		INCHES
12.70	MEAN	5.00		10.82	MEAN	4.26
.06	SE(M)	.02		.04	SE(M)	.02
.97	ST DEV	.38		.88	ST DEV	.34
.04	SE(SD)	.02		.03	SE(SD)	.01

* * * * *	* * * * *

COEFF. OF VARIATION	7.6%		COEFF. OF VARIATION	8.1%
SYMMETRY----VETA I	.08		SYMMETRY----VETA I	-.11
KURTOSIS----VETA II	-.30		KURTOSIS----VETA II	.22

* * * * *	* * * * *

NUMBER OF SUBJECTS	293		NUMBER OF SUBJECTS	491

4. Medial Malleolus Height

Landmark: Medial malleolus

Instrument: Adjustable block

Position of Subject: Subject stands erect, feet slightly apart, and weight distributed equally on both feet.

Procedure: With an adjustable block, measure the vertical distance from the standing surface to the middle of the medial malleolus landmark.

VARIABLE NO.   4--MED MALLEOLUS HT   MALE DATA

-- INTERVALS --   -- FREQUENCIES --

		ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
5.15 -	5.24	1	1	.34	.34
5.25 -	5.34	0	1	.00	.34
5.35 -	5.44	0	1	.00	.34
5.45 -	5.54	0	1	.00	.34
5.55 -	5.64	0	1	.00	.34
5.65 -	5.74	0	1	.00	.34
5.75 -	5.84	0	1	.00	.34
5.85 -	5.94	0	1	.00	.34
5.95 -	6.04	0	1	.00	.34
6.05 -	6.14	0	1	.00	.34
6.15 -	6.24	0	1	.00	.34
6.25 -	6.34	0	1	.00	.34
6.35 -	6.44	0	1·	.00	.34
6.45 -	6.54	1	2	.34	.68
6.55 -	6.64	3	5	1.03	1.71
6.65 -	6.74	2	7	.68	2.40
6.75 -	6.84	2	9	.68	3.08
6.85 -	6.94	2	11	.68	3.77
6.95 -	7.04	2	13	.68	4.45
7.05 -	7.14	6	19	2.05	6.51
7.15 -	7.24	6	25	2.05	8.56
7.25 -	7.34	9	34	3.08	11.64
7.35 -	7.44	11	45	3.77	15.41
7.45 -	7.54	10	55	3.42	18.84
7.55 -	7.64	15	70	5.14	23.97
7.65 -	7.74	11	81	3.77	27.74
7.75 -	7.84	17	98	5.82	33.56
7.85 -	7.94	16	114	5.48	39.04
7.95 -	8.04	13	127	4.45	43.49
8.05 -	8.14	15	142	5.14	48.63
8.15 -	8.24	25	167	8.56	57.19
8.25 -	8.34	15	182	5.14	62.33
8.35 -	8.44	26	208	8.90	71.23
8.45 -	8.54	10	218	3.42	74.66
8.55 -	8.64	14	232	4.79	79.45
8.65 -	8.74	10	242	3.42	82.88
8.75 -	8.84	11	253	3.77	86.64
8.85 -	8.94	8	261	2.74	89.38
8.95 -	9.04	13	274	4.45	93.84
9.05 -	9.14	3	277	1.03	94.86
9.15 -	9.24	8	285	2.74	97.60
9.25 -	9.34	2	287	.68	98.29
9.35 -	9.44	1	288	.34	98.63
9.45 -	9.54	1	289	.34	98.97
9.55 -	9.64	1	290	.34	99.32
9.65 -	9.74	0	290	.00	99.32
9.75 -	9.84	1	291	.34	99.66
9.85 -	9.94	1	292	.34	100.00

VARIABLE NO.   4--MED MALLEOLUS HT   FEMALE DATA

-- INTERVALS --		ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
3.75 -	3.94	1	1	.20	.20
3.95 -	4.14	0	1	.00	.20
4.15 -	4.34	1	2	.20	.41
4.35 -	4.54	0	2	.00	.41
4.55 -	4.74	0	2	.00	.41
4.75 -	4.94	2	4	.41	.81
4.95 -	5.14	1	5	.20	1.02
5.15 -	5.34	1	6	.20	1.22
5.35 -	5.54	3	9	.61	1.83
5.55 -	5.74	1	10	.20	2.04
5.75 -	5.94	8	18	1.63	3.67
5.95 -	6.14	15	33	3.05	6.72
6.15 -	6.34	19	52	3.87	10.59
6.35 -	6.54	23	75	4.68	15.27
6.55 -	6.74	40	115	8.15	23.42
6.75 -	6.94	46	161	9.37	32.79
6.95 -	7.14	62	223	12.63	45.42
7.15 -	7.34	71	294	14.46	59.88
7.35 -	7.54	59	353	12.02	71.89
7.55 -	7.74	45	398	9.16	81.06
7.75 -	7.94	40	438	8.15	89.21
7.95 -	8.14	24	462	4.89	94.09
8.15 -	8.34	16	478	3.26	97.35
8.35 -	8.54	7	485	1.43	98.78
8.55 -	8.74	3	488	.61	99.39
8.75 -	8.94	2	490	.41	99.80
8.95 -	9.14	1	491	.20	100.00

VARIABLE NO.   4--MED MALLEOLUS HT

MALE DATA				FEMALE DATA		

* * * * *   * * * * *

| PERCENTILES | | | | PERCENTILES | | |
CENTIMETERS		INCHES		CENTIMETERS		INCHES
6.56	1ST	2.58		5.22	1ST	2.06
6.74	2ND	2.65		5.60	2ND	2.21
6.86	3RD	2.70		5.81	3RD	2.29
7.02	5TH	2.76		6.06	5TH	2.38
7.27	10TH	2.86		6.38	10TH	2.51
7.45	15TH	2.93		6.56	15TH	2.58
7.58	20TH	2.98		6.69	20TH	2.63
7.69	25TH	3.03		6.80	25TH	2.68
7.80	30TH	3.07		6.89	30TH	2.71
7.89	35TH	3.11		6.98	35TH	2.75
7.98	40TH	3.14		7.05	40TH	2.78
8.06	45TH	3.17		7.13	45TH	2.81
8.14	50TH	3.21		7.20	50TH	2.84
8.22	55TH	3.24		7.28	55TH	2.87
8.30	60TH	3.27		7.35	60TH	2.90
8.39	65TH	3.30		7.43	65TH	2.93
8.47	70TH	3.34		7.52	70TH	2.96
8.56	75TH	3.37		7.61	75TH	3.00
8.67	80TH	3.41		7.71	80TH	3.04
8.78	85TH	3.46		7.83	85TH	3.08
8.92	90TH	3.51		7.99	90TH	3.15
9.13	95TH	3.60		8.22	95TH	3.24
9.26	97TH	3.65		8.36	97TH	3.29
9.36	98TH	3.69		8.46	98TH	3.33
9.52	99TH	3.75		8.59	99TH	3.38

* * * * *   * * * * *

| THE SUMMARY STATISTICS | | | | THE SUMMARY STATISTICS | | |
CENTIMETERS		INCHES		CENTIMETERS		INCHES
8.12	MEAN	3.20		7.17	MEAN	2.82
.04	SE(M)	.02		.03	SE(M)	.01
.65	ST DEV	.26		.67	ST DEV	.26
.03	SE(SD)	.01		.02	SE(SD)	.01

* * * * *   * * * * *

COEFF. OF VARIATION	8.0%		COEFF. OF VARIATION	9.4%
SYMMETRY----VETA I	-.33		SYMMETRY----VETA I	-.66
KURTOSIS----VETA II	.79		KURTOSIS----VETA II	1.96

* * * * *   * * * * *

| NUMBER OF SUBJECTS | 292 | | NUMBER OF SUBJECTS | 491 |

5. Lateral Malleolus Height

Landmark: Lateral malleolus

Instrument: Adjustable block

Position of Subject: Subject stands erect, heels together, and weight distributed equally on both feet.

Procedure: With an adjustable block, measure the vertical distance from the standing surface to the middle of the lateral malleolus landmark.
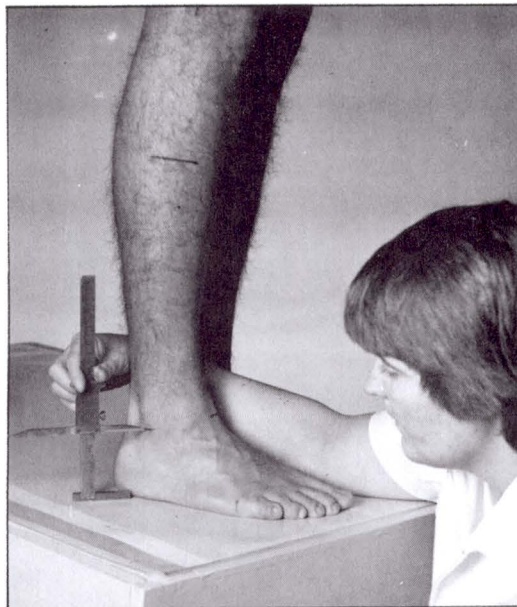
VARIABLE NO. 5--LAT MALLEOLUS HT   MALE DATA

-- INTERVALS --		ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
5.25 -	5.34	1	1	.34	.34
5.35 -	5.44	1	2	.34	.68
5.45 -	5.54	2	4	.68	1.37
5.55 -	5.64	0	4	.00	1.37
5.65 -	5.74	3	7	1.02	2.39
5.75 -	5.84	1	8	.34	2.73
5.85 -	5.94	2	10	.68	3.41
5.95 -	6.04	3	13	1.02	4.44
6.05 -	6.14	4	17	1.37	5.80
6.15 -	6.24	5	22	1.71	7.51
6.25 -	6.34	7	29	2.39	9.90
6.35 -	6.44	6	35	2.05	11.95
6.45 -	6.54	11	46	3.75	15.70
6.55 -	6.64	12	58	4.10	19.80
6.65 -	6.74	12	70	4.10	23.89
6.75 -	6.84	16	86	5.46	29.35
6.85 -	6.94	11	97	3.75	33.11
6.95 -	7.04	24	121	8.19	41.30
7.05 -	7.14	11	132	3.75	45.05
7.15 -	7.24	16	148	5.46	50.51
7.25 -	7.34	10	158	3.41	53.92
7.35 -	7.44	18	176	6.14	60.07
7.45 -	7.54	12	188	4.10	64.16
7.55 -	7.64	14	202	4.78	68.94
7.65 -	7.74	15	217	5.12	74.06
7.75 -	7.84	17	234	5.80	79.86
7.85 -	7.94	10	244	3.41	83.28
7.95 -	8.04	8	252	2.73	86.01
8.05 -	8.14	7	259	2.39	88.40
8.15 -	8.24	7	266	2.39	90.78
8.25 -	8.34	8	274	2.73	93.52
8.35 -	8.44	7	281	2.39	95.90
8.45 -	8.54	2	283	.68	96.59
8.55 -	8.64	4	287	1.37	97.95
8.65 -	8.74	0	287	.00	97.95
8.75 -	8.84	0	287	.00	97.95
8.85 -	8.94	2	289	.68	98.63
8.95 -	9.04	1	290	.34	98.98
9.05 -	9.14	1	291	.34	99.32
9.15 -	9.24	0	291	.00	99.32
9.25 -	9.34	2	293	.68	100.00

VARIABLE NO.   5--LAT MALLEOLUS HT   FEMALE DATA

-- INTERVALS --		ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
4.65 -	4.74	1	1	.20	.20
4.75 -	4.84	0	1	.00	.20
4.85 -	4.94	1	2	.20	.41
4.95 -	5.04	6	8	1.22	1.63
5.05 -	5.14	3	11	.61	2.24
5.15 -	5.24	3	14	.61	2.85
5.25 -	5.34	8	22	1.63	4.48
5.35 -	5.44	5	27	1.02	5.50
5.45 -	5.54	7	34	1.43	6.92
5.55 -	5.64	13	47	2.65	9.57
5.65 -	5.74	11	58	2.24	11.81
5.75 -	5.84	18	76	3.67	15.48
5.85 -	5.94	7	83	1.43	16.90
5.95 -	6.04	20	103	4.07	20.98
6.05 -	6.14	16	119	3.26	24.24
6.15 -	6.24	21	140	4.28	28.51
6.25 -	6.34	31	171	6.31	34.83
6.35 -	6.44	30	201	6.11	40.94
6.45 -	6.54	24	225	4.89	45.82
6.55 -	6.64	33	258	6.72	52.55
6.65 -	6.74	31	289	6.31	58.86
6.75 -	6.84	26	315	5.30	64.15
6.85 -	6.94	34	349	6.92	71.08
6.95 -	7.04	32	381	6.52	77.60
7.05 -	7.14	23	404	4.68	82.28
7.15 -	7.24	15	419	3.05	85.34
7.25 -	7.34	13	432	2.65	87.98
7.35 -	7.44	11	443	2.24	90.22
7.45 -	7.54	14	457	2.85	93.08
7.55 -	7.64	5	462	1.02	94.09
7.65 -	7.74	4	466	.81	94.91
7.75 -	7.84	9	475	1.83	96.74
7.85 -	7.94	4	479	.81	97.56
7.95 -	8.04	3	482	.61	98.17
8.05 -	8.14	2	484	.41	98.57
8.15 -	8.24	1	485	.20	98.78
8.25 -	8.34	0	485	.00	98.78
8.35 -	8.44	1	486	.20	98.98
8.45 -	8.54	2	488	.41	99.39
8.55 -	8.64	1	489	.20	99.59
8.65 -	8.74	2	491	.41	100.00

VARIABLE NO.   5--LAT MALLEOLUS HT

MALE DATA				FEMALE DATA		
* * * * *				* * * * *		

PERCENTILES				PERCENTILES		
CENTIMETERS		INCHES		CENTIMETERS		INCHES
5.51	1ST	2.17		4.99	1ST	1.97
5.73	2ND	2.26		5.13	2ND	2.02
5.87	3RD	2.31		5.24	3RD	2.06
6.06	5TH	2.39		5.40	5TH	2.13
6.34	10TH	2.49		5.68	10TH	2.23
6.52	15TH	2.57		5.87	15TH	2.31
6.66	20TH	2.62		6.02	20TH	2.37
6.78	25TH	2.67		6.14	25TH	2.42
6.89	30TH	2.71		6.25	30TH	2.46
6.99	35TH	2.75		6.35	35TH	2.50
7.08	40TH	2.79		6.44	40TH	2.54
7.17	45TH	2.82		6.53	45TH	2.57
7.26	50TH	2.86		6.61	50TH	2.60
7.35	55TH	2.89		6.69	55TH	2.64
7.44	60TH	2.93		6.77	60TH	2.67
7.53	65TH	2.97		6.85	65TH	2.70
7.63	70TH	3.00		6.94	70TH	2.73
7.74	75TH	3.05		7.03	75TH	2.77
7.86	80TH	3.09		7.13	80TH	2.81
8.00	85TH	3.15		7.25	85TH	2.85
8.19	90TH	3.22		7.41	90TH	2.92
8.47	95TH	3.33		7.69	95TH	3.03
8.66	97TH	3.41		7.90	97TH	3.11
8.80	98TH	3.47		8.08	98TH	3.18
9.04	99TH	3.56		8.43	99TH	3.32

* * * * *   * * * * *

THE SUMMARY STATISTICS				THE SUMMARY STATISTICS		
CENTIMETERS		INCHES		CENTIMETERS		INCHES
7.26	MEAN	2.86		6.59	MEAN	2.59
.04	SE(M)	.02		.03	SE(M)	.01
.72	ST DEV	.29		.69	ST DEV	.27
.03	SE(SD)	.01		.02	SE(SD)	.01

* * * * *   * * * * *

COEFF. OF VARIATION	10.0%		COEFF. OF VARIATION	10.4%
SYMMETRY----VETA I	.03		SYMMETRY----VETA I	.04
KURTOSIS----VETA II	-.06		KURTOSIS----VETA II	.20

* * * * *   * * * * *

NUMBER OF SUBJECTS	293		NUMBER OF SUBJECTS	491

6. Dorsal Arch Height

Landmark: Dorsal junction of the foot and leg

Instrument: Adjustable block

Position of Subject: Subject stands erect, feet slightly apart, and weight distributed equally on both feet.

Procedure: With an adjustable block positioned on the medial side of the foot, measure the vertical distance from the standing surface to the highest point on the dorsal surface of the foot at the level of the foot-leg landmark.

VARIABLE NO.   6--DORSAL ARCH HEIGHT   MALE DATA

-- INTERVALS --		ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
6.85 -	6.94	1	1	.34	.34
6.95 -	7.04	0	1	.00	.34
7.05 -	7.14	0	1	.00	.34
7.15 -	7.24	0	1	.00	.34
7.25 -	7.34	0	1	.00	.34
7.35 -	7.44	0	1	.00	.34
7.45 -	7.54	0	1	.00	.34
7.55 -	7.64	4	5	1.37	1.71
7.65 -	7.74	5	10	1.71	3.41
7.75 -	7.84	9	19	3.07	6.48
7.85 -	7.94	4	23	1.37	7.85
7.95 -	8.04	12	35	4.10	11.95
8.05 -	8.14	4	39	1.37	13.31
8.15 -	8.24	9	48	3.07	16.38
8.25 -	8.34	14	62	4.78	21.16
8.35 -	8.44	16	78	5.46	26.62
8.45 -	8.54	21	99	7.17	33.79
8.55 -	8.64	15	114	5.12	38.91
8.65 -	8.74	13	127	4.44	43.34
8.75 -	8.84	16	143	5.46	48.81
8.85 -	8.94	21	164	7.17	55.97
8.95 -	9.04	9	173	3.07	59.04
9.05 -	9.14	14	187	4.78	63.82
9.15 -	9.24	22	209	7.51	71.33
9.25 -	9.34	14	223	4.78	76.11
9.35 -	9.44	15	238	5.12	81.23
9.45 -	9.54	10	248	3.41	84.64
9.55 -	9.64	11	259	3.75	88.40
9.65 -	9.74	5	264	1.71	90.10
9.75 -	9.84	10	274	3.41	93.52
9.85 -	9.94	7	281	2.39	95.90
9.95 -	10.04	1	282	.34	96.25
10.05 -	10.14	2	284	.68	96.93
10.15 -	10.24	2	286	.68	97.61
10.25 -	10.34	2	288	.68	98.29
10.35 -	10.44	2	290	.68	98.98
10.45 -	10.54	2	292	.68	99.66
10.55 -	10.64	1	293	.34	100.00

VARIABLE NO.   6--DORSAL ARCH HEIGHT   FEMALE DATA

-- INTERVALS --		ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
6.25 -	6.34	1	1	.20	.20
6.35 -	6.44	1	2	.20	.41
6.45 -	6.54	1	3	.20	.61
6.55 -	6.64	2	5	.41	1.02
6.65 -	6.74	2	7	.41	1.43
6.75 -	6.84	5	12	1.02	2.44
6.85 -	6.94	3	15	.61	3.05
6.95 -	7.04	7	22	1.43	4.48
7.05 -	7.14	9	31	1.83	6.31
7.15 -	7.24	16	47	3.26	9.57
7.25 -	7.34	16	63	3.26	12.83
7.35 -	7.44	20	83	4.07	16.90
7.45 -	7.54	19	102	3.87	20.77
7.55 -	7.64	24	126	4.89	25.66
7.65 -	7.74	25	151	5.09	30.75
7.75 -	7.84	33	184	6.72	37.47
7.85 -	7.94	26	210	5.30	42.77
7.95 -	8.04	32	242	6.52	49.29
8.05 -	8.14	38	280	7.74	57.03
8.15 -	8.24	27	307	5.50	62.53
8.25 -	8.34	30	337	6.11	68.64
8.35 -	8.44	28	365	5.70	74.34
8.45 -	8.54	27	392	5.50	79.84
8.55 -	8.64	22	414	4.48	84.32
8.65 -	8.74	19	433	3.87	88.19
8.75 -	8.84	16	449	3.26	91.45
8.85 -	8.94	12	461	2.44	93.89
8.95 -	9.04	10	471	2.04	95.93
9.05 -	9.14	1	472	.20	96.13
9.15 -	9.24	5	477	1.02	97.15
9.25 -	9.34	5	482	1.02	98.17
9.35 -	9.44	1	483	.20	98.37
9.45 -	9.54	1	484	.20	98.57
9.55 -	9.64	3	487	.61	99.19
9.65 -	9.74	2	489	.41	99.59
9.75 -	9.84	2	491	.41	100.00

VARIABLE NO.   6--DORSAL ARCH HEIGHT

MALE DATA				FEMALE DATA		
* * * * *				* * * * *		

PERCENTILES				PERCENTILES		
CENTIMETERS		INCHES		CENTIMETERS		INCHES
7.60	1ST	2.99		6.67	1ST	2.63
7.66	2ND	3.02		6.81	2ND	2.68
7.72	3RD	3.04		6.91	3RD	2.72
7.82	5TH	3.08		7.05	5TH	2.77
8.02	10TH	3.16		7.27	10TH	2.86
8.17	15TH	3.22		7.42	15TH	2.92
8.30	20TH	3.27		7.54	20TH	2.97
8.41	25TH	3.31		7.65	25TH	3.01
8.51	30TH	3.35		7.74	30TH	3.05
8.61	35TH	3.39		7.83	35TH	3.08
8.70	40TH	3.42		7.90	40TH	3.11
8.78	45TH	3.46		7.98	45TH	3.14
8.87	50TH	3.49		8.05	50TH	3.17
8.96	55TH	3.53		8.13	55TH	3.20
9.04	60TH	3.56		8.20	60TH	3.23
9.13	65TH	3.60		8.28	65TH	3.26
9.23	70TH	3.63		8.36	70TH	3.29
9.33	75TH	3.67		8.45	75TH	3.32
9.44	80TH	3.72		8.54	80TH	3.36
9.57	85TH	3.77		8.66	85TH	3.41
9.73	90TH	3.83		8.81	90TH	3.47
9.97	95TH	3.93		9.05	95TH	3.56
10.14	97TH	3.99		9.22	97TH	3.63
10.26	98TH	4.04		9.36	98TH	3.68
10.48	99TH	4.12		9.60	99TH	3.78

* * * * *				* * * * *		

THE SUMMARY STATISTICS				THE SUMMARY STATISTICS		
CENTIMETERS		INCHES		CENTIMETERS		INCHES
8.88	MEAN	3.49		8.05	MEAN	3.17
.04	SE(M)	.01		.03	SE(M)	.01
.65	ST DEV	.26		.61	ST DEV	.24
.03	SE(SD)	.01		.02	SE(SD)	.01

* * * * *				* * * * *		

COEFF. OF VARIATION	7.3%		COEFF. OF VARIATION	7.5%
SYMMETRY----VETA I	.09		SYMMETRY----VETA I	.06
KURTOSIS----VETA II	-.28		KURTOSIS----VETA II	.01

* * * * *			* * * * *	

NUMBER OF SUBJECTS	293		NUMBER OF SUBJECTS	491

58

7. Plantar Arch Height

Landmark: Maximum plantar arch height

Instrument: Adjustable block

Position of Subject: Subject stands erect, feet slightly apart, and weight distributed equally on both feet.

Procedure: With an adjustable block positioned on the medial side of the foot, measure the vertical distance from the standing surface to the middle of the maximum plantar arch height landmark.

VARIABLE NO.   7--PLANTAR ARCH HT   MALE DATA

-- INTERVALS --

		ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
1.35 -	1.44	1	1	.34	.34
1.45 -	1.54	0	1	.00	.34
1.55 -	1.64	0	1	.00	.34
1.65 -	1.74	1	2	.34	.68
1.75 -	1.84	2	4	.68	1.37
1.85 -	1.94	2	6	.68	2.05
1.95 -	2.04	3	9	1.02	3.07
2.05 -	2.14	8	17	2.73	5.80
2.15 -	2.24	9	26	3.07	8.87
2.25 -	2.34	12	38	4.10	12.97
2.35 -	2.44	19	57	6.48	19.45
2.45 -	2.54	18	75	6.14	25.60
2.55 -	2.64	13	88	4.44	30.03
2.65 -	2.74	14	102	4.78	34.81
2.75 -	2.84	11	113	3.75	38.57
2.85 -	2.94	19	132	6.48	45.05
2.95 -	3.04	16	148	5.46	50.51
3.05 -	3.14	22	170	7.51	58.02
3.15 -	3.24	12	182	4.10	62.12
3.25 -	3.34	22	204	7.51	69.62
3.35 -	3.44	17	221	5.80	75.43
3.45 -	3.54	14	235	4.78	80.20
3.55 -	3.64	13	248	4.44	84.64
3.65 -	3.74	12	260	4.10	88.74
3.75 -	3.84	6	266	2.05	90.78
3.85 -	3.94	6	272	2.05	92.83
3.95 -	4.04	5	277	1.71	94.54
4.05 -	4.14	3	280	1.02	95.56
4.15 -	4.24	4	284	1.37	96.93
4.25 -	4.34	3	287	1.02	97.95
4.35 -	4.44	2	289	.68	98.63
4.45 -	4.54	3	292	1.02	99.66
4.55 -	4.64	0	292	.00	99.66
4.65 -	4.74	1	293	.34	100.00

VARIABLE NO.   7--PLANTAR ARCH HT   FEMALE DATA

-- INTERVALS --		ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
1.15 -	1.24	1	1	.20	.20
1.25 -	1.34	3	4	.61	.81
1.35 -	1.44	0	4	.00	.81
1.45 -	1.54	3	7	.61	1.43
1.55 -	1.64	3	10	.61	2.04
1.65 -	1.74	5	15	1.02	3.05
1.75 -	1.84	3	18	.61	3.67
1.85 -	1.94	7	25	1.43	5.09
1.95 -	2.04	14	39	2.85	7.94
2.05 -	2.14	11	50	2.24	10.18
2.15 -	2.24	12	62	2.44	12.63
2.25 -	2.34	25	87	5.09	17.72
2.35 -	2.44	20	107	4.07	21.79
2.45 -	2.54	33	140	6.72	28.51
2.55 -	2.64	24	164	4.89	33.40
2.65 -	2.74	34	198	6.92	40.33
2.75 -	2.84	39	237	7.94	48.27
2.85 -	2.94	33	270	6.72	54.99
2.95 -	3.04	35	305	7.13	62.12
3.05 -	3.14	27	332	5.50	67.62
3.15 -	3.24	33	365	6.72	74.34
3.25 -	3.34	26	391	5.30	79.63
3.35 -	3.44	21	412	4.28	83.91
3.45 -	3.54	22	434	4.48	88.39
3.55 -	3.64	13	447	2.65	91.04
3.65 -	3.74	9	456	1.83	92.87
3.75 -	3.84	8	464	1.63	94.50
3.85 -	3.94	8	472	1.63	96.13
3.95 -	4.04	9	481	1.83	97.96
4.05 -	4.14	1	482	.20	98.17
4.15 -	4.24	2	484	.41	98.57
4.25 -	4.34	1	485	.20	98.78
4.35 -	4.44	1	486	.20	98.98
4.45 -	4.54	2	488	.41	99.39
4.55 -	4.64	1	489	.20	99.59
4.65 -	4.74	0	489	.00	99.59
4.75 -	4.84	0	489	.00	99.59
4.85 -	4.94	0	489	.00	99.59
4.95 -	5.04	1	490	.20	99.80
5.05 -	5.14	1	491	.20	100.00

VARIABLE NO.   7--PLANTAR ARCH HT

MALE DATA			FEMALE DATA		
*****			*****		
PERCENTILES			PERCENTILES		
CENTIMETERS		INCHES	CENTIMETERS		INCHES
1.83	1ST	.72	1.48	1ST	.58
1.93	2ND	.76	1.65	2ND	.65
2.00	3RD	.79	1.76	3RD	.69
2.10	5TH	.83	1.91	5TH	.75
2.27	10TH	.89	2.14	10TH	.84
2.40	15TH	.94	2.29	15TH	.90
2.50	20TH	.98	2.41	20TH	.95
2.60	25TH	1.02	2.51	25TH	.99
2.68	30TH	1.06	2.59	30TH	1.02
2.77	35TH	1.09	2.67	35TH	1.05
2.85	40TH	1.12	2.75	40TH	1.08
2.93	45TH	1.15	2.82	45TH	1.11
3.01	50TH	1.18	2.89	50TH	1.14
3.09	55TH	1.22	2.96	55TH	1.16
3.17	60TH	1.25	3.03	60TH	1.19
3.26	65TH	1.28	3.10	65TH	1.22
3.35	70TH	1.32	3.17	70TH	1.25
3.45	75TH	1.36	3.26	75TH	1.28
3.56	80TH	1.40	3.35	80TH	1.32
3.69	85TH	1.45	3.46	85TH	1.36
3.85	90TH	1.52	3.61	90TH	1.42
4.09	95TH	1.61	3.84	95TH	1.51
4.24	97TH	1.67	4.02	97TH	1.58
4.34	98TH	1.71	4.16	98TH	1.64
4.50	99TH	1.77	4.40	99TH	1.73

*****   *****

THE SUMMARY STATISTICS			THE SUMMARY STATISTICS		
CENTIMETERS		INCHES	CENTIMETERS		INCHES
3.03	MEAN	1.19	2.89	MEAN	1.14
.04	SE(M)	.01	.03	SE(M)	.01
.60	ST DEV	.24	.59	ST DEV	.23
.02	SE(SD)	.01	.02	SE(SD)	.01

*****   *****

COEFF. OF VARIATION	19.9%	COEFF. OF VARIATION	20.5%
SYMMETRY----VETA I	.19	SYMMETRY----VETA I	.14
KURTOSIS----VETA II	-.36	KURTOSIS----VETA II	.51

*****   *****

NUMBER OF SUBJECTS	293	NUMBER OF SUBJECTS	491

8. BOF Height

Landmark: 1st metatarsal-phalangeal protrusion, dorsal aspect

Instrument: Adjustable block

Position of Subject: Subject stands erect, feet slightly apart, and weight distributed equally on both feet.

Procedure: With an adjustable block positioned on the medial side of the foot, measure the vertical distance from the standing surface to the dorsal surface of the foot at the dorsal landmark of the 1st metatarsal-phalangeal joint.
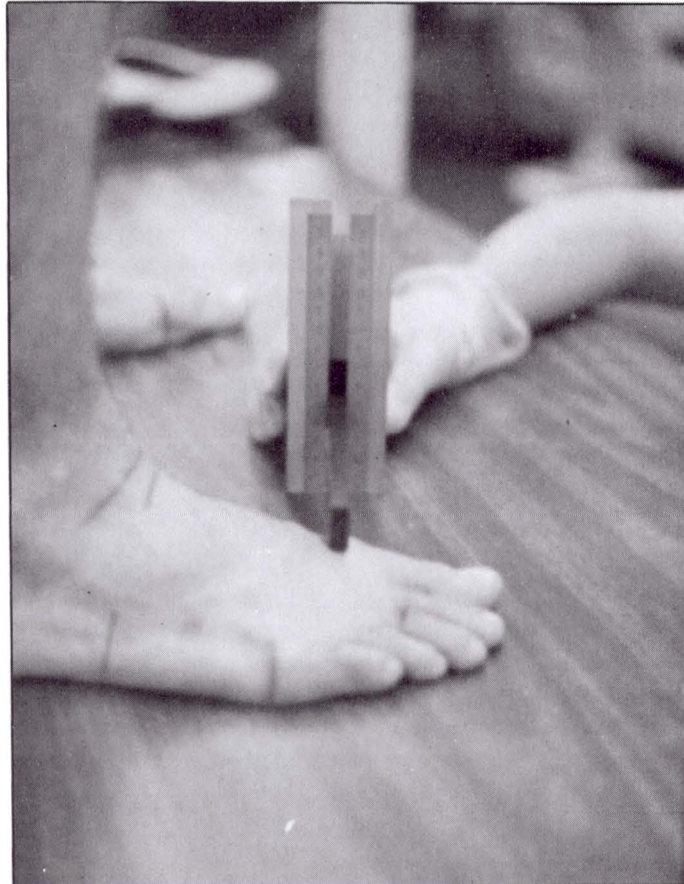
VARIABLE NO.   8--BALL OF FOOT HT   MALE DATA

-- INTERVALS --		-- FREQUENCIES --			
		ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
2.95 -	3.04	1	1	.34	.34
3.05 -	3.14	0	1	.00	.34
3.15 -	3.24	3	4	1.02	1.37
3.25 -	3.34	1	5	.34	1.71
3.35 -	3.44	13	18	4.44	6.14
3.45 -	3.54	12	30	4.10	10.24
3.55 -	3.64	20	50	6.83	17.06
3.65 -	3.74	29	79	9.90	26.96
3.75 -	3.84	38	117	12.97	39.93
3.85 -	3.94	47	164	16.04	55.97
3.95 -	4.04	40	204	13.65	69.62
4.05 -	4.14	30	234	10.24	79.86
4.15 -	4.24	27	261	9.22	89.08
4.25 -	4.34	15	276	5.12	94.20
4.35 -	4.44	7	283	2.39	96.59
4.45 -	4.54	7	290	2.39	98.98
4.55 -	4.64	2	292	.68	99.66
4.65 -	4.74	0	292	.00	99.66
4.75 -	4.84	1	293	.34	100.00

VARIABLE NO.   8--BALL OF FOOT HT   FEMALE DATA

-- INTERVALS --		-- FREQUENCIES --			
		ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
2.75 -	2.84	1	1	.20	.20
2.85 -	2.94	1	2	.20	.41
2.95 -	3.04	3	5	.61	1.02
3.05 -	3.14	7	12	1.43	2.44
3.15 -	3.24	26	38	5.30	7.74
3.25 -	3.34	43	81	8.76	16.50
3.35 -	3.44	63	144	12.83	29.33
3.45 -	3.54	72	216	14.66	43.99
3.55 -	3.64	85	301	17.31	61.30
3.65 -	3.74	60	361	12.22	73.52
3.75 -	3.84	66	427	13.44	86.97
3.85 -	3.94	36	463	7.33	94.30
3.95 -	4.04	17	480	3.46	97.76
4.05 -	4.14	9	489	1.83	99.59
4.15 -	4.24	1	490	.20	99.80
4.25 -	4.34	1	491	.20	100.00

VARIABLE NO. 8--BALL OF FOOT HT

MALE DATA				FEMALE DATA		

* * * * *   * * * * *

| PERCENTILES | | | | PERCENTILES | | |
CENTIMETERS		INCHES		CENTIMETERS		INCHES
3.23	1ST	1.27		3.06	1ST	1.20
3.32	2ND	1.31		3.11	2ND	1.23
3.38	3RD	1.33		3.15	3RD	1.24
3.45	5TH	1.36		3.20	5TH	1.26
3.56	10TH	1.40		3.28	10TH	1.29
3.62	15TH	1.43		3.34	15TH	1.31
3.68	20TH	1.45		3.38	20TH	1.33
3.72	25TH	1.47		3.42	25TH	1.35
3.77	30TH	1.48		3.46	30TH	1.36
3.80	35TH	1.50		3.49	35TH	1.37
3.84	40TH	1.51		3.52	40TH	1.39
3.88	45TH	1.53		3.55	45TH	1.40
3.91	50TH	1.54		3.58	50TH	1.41
3.95	55TH	1.55		3.62	55TH	1.42
3.98	60TH	1.57		3.65	60TH	1.44
4.02	65TH	1.58		3.68	65TH	1.45
4.06	70TH	1.60		3.71	70TH	1.46
4.10	75TH	1.62		3.75	75TH	1.48
4.15	80TH	1.63		3.79	80TH	1.49
4.21	85TH	1.66		3.84	85TH	1.51
4.28	90TH	1.69		3.90	90TH	1.53
4.38	95TH	1.73		3.98	95TH	1.57
4.45	97TH	1.75		4.03	97TH	1.59
4.50	98TH	1.77		4.06	98TH	1.60
4.57	99TH	1.80		4.11	99TH	1.62

* * * * *   * * * * *

| THE SUMMARY STATISTICS | | | | THE SUMMARY STATISTICS | | |
CENTIMETERS		INCHES		CENTIMETERS		INCHES
3.91	MEAN	1.54		3.59	MEAN	1.41
.02	SE(M)	.01		.01	SE(M)	.00
.28	ST DEV	.11		.24	ST DEV	.09
.01	SE(SD)	.00		.01	SE(SD)	.00

* * * * *   * * * * *

COEFF. OF VARIATION	7.3%		COEFF. OF VARIATION	6.6%
SYMMETRY----VETA I	-.04		SYMMETRY----VETA I	-.03
KURTOSIS----VETA II	.14		KURTOSIS----VETA II	-.18

* * * * *   * * * * *

NUMBER OF SUBJECTS	293		NUMBER OF SUBJECTS	491

9. First Toe Height

Landmark: None

Instrument: Adjustable block

Position of Subject: Subject stands erect, feet slightly apart, and weight distributed equally on both feet.

Procedure: With an adjustable block positioned anterior to the 1st (great) toe, measure the vertical distance from the standing surface to the highest point on the dorsal surface of the distal phalanx of the 1st toe.
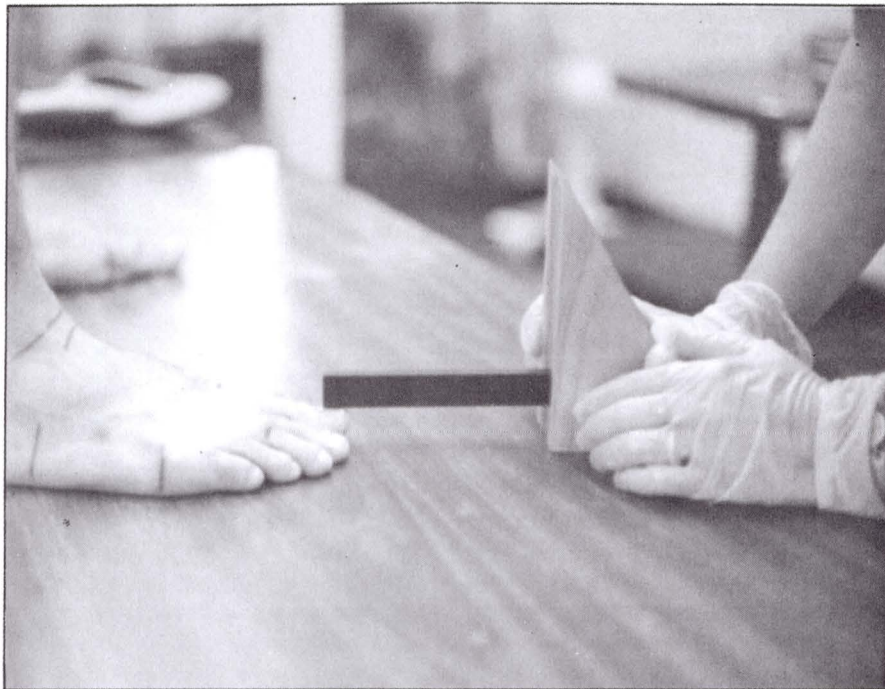
VARIABLE NO.   9--1ST TOE HEIGHT   MALE DATA

-- INTERVALS --   -- FREQUENCIES --

		ACTUAL FREQ.	CUM.-FREQ.	PCT.-FREQ.	CUM.-PCT.-FQ.
1.75 -	1.84	12	12	4.10	4.10
1.85 -	1.94	20	32	6.83	10.92
1.95 -	2.04	43	75	14.68	25.60
2.05 -	2.14	53	128	18.09	43.69
2.15 -	2.24	44	172	15.02	58.70
2.25 -	2.34	54	226	18.43	77.13
2.35 -	2.44	29	255	9.90	87.03
2.45 -	2.54	23	278	7.85	94.88
2.55 -	2.64	8	286	2.73	97.61
2.65 -	2.74	6	292	2.05	99.66
2.75 -	2.84	1	293	.34	100.00

VARIABLE NO.   9--1ST TOE HEIGHT   FEMALE DATA

-- INTERVALS --		ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
1.35 -	1.44	1	1	.20	.20
1.45 -	1.54	4	5	.81	1.02
1.55 -	1.64	16	21	3.26	4.28
1.65 -	1.74	58	79	11.81	16.09
1.75 -	1.84	97	176	19.76	35.85
1.85 -	1.94	95	271	19.35	55.19
1.95 -	2.04	88	359	17.92	73.12
2.05 -	2.14	56	415	11.41	84.52
2.15 -	2.24	47	462	9.57	94.09
2.25 -	2.34	15	477	3.05	97.15
2.35 -	2.44	6	483	1.22	98.37
2.45 -	2.54	5	488	1.02	99.39
2.55 -	2.64	1	489	.20	99.59
2.65 -	2.74	1	490	.20	99.80
2.75 -	2.84	0	490	.00	99.80
2.85 -	2.94	1	491	.20	100.00

VARIABLE NO. 9--1ST TOE HEIGHT

MALE DATA				FEMALE DATA		
* * * * *				* * * * *		

PERCENTILES				PERCENTILES		
CENTIMETERS		INCHES		CENTIMETERS		INCHES
1.77	1ST	.70		1.55	1ST	.61
1.80	2ND	.71		1.58	2ND	.62
1.83	3RD	.72		1.61	3RD	.63
1.86	5TH	.73		1.64	5TH	.65
1.93	10TH	.76		1.70	10TH	.67
1.97	15TH	.78		1.74	15TH	.68
2.01	20TH	.79		1.77	20TH	.70
2.05	25TH	.81		1.80	25TH	.71
2.08	30TH	.82		1.83	30TH	.72
2.11	35TH	.83		1.85	35TH	.73
2.14	40TH	.84		1.88	40TH	.74
2.16	45TH	.85		1.90	45TH	.75
2.19	50TH	.86		1.92	50TH	.76
2.22	55TH	.87		1.95	55TH	.77
2.25	60TH	.89		1.97	60TH	.78
2.28	65TH	.90		2.00	65TH	.79
2.31	70TH	.91		2.03	70TH	.80
2.34	75TH	.92		2.06	75TH	.81
2.38	80TH	.94		2.10	80TH	.83
2.43	85TH	.96		2.14	85TH	.84
2.48	90TH	.98		2.20	90TH	.87
2.57	95TH	1.01		2.30	95TH	.90
2.62	97TH	1.03		2.36	97TH	.93
2.66	98TH	1.05		2.41	98TH	.95
2.72	99TH	1.07		2.50	99TH	.99

* * * * *				* * * * *		

THE SUMMARY STATISTICS				THE SUMMARY STATISTICS		
CENTIMETERS		INCHES		CENTIMETERS		INCHES
2.20	MEAN	.87		1.94	MEAN	.76
.01	SE(M)	.00		.01	SE(M)	.00
.21	ST DEV	.08		.20	ST DEV	.08
.01	SE(SD)	.00		.01	SE(SD)	.00

* * * * *				* * * * *		

COEFF. OF VARIATION	9.5%			COEFF. OF VARIATION	10.4%
SYMMETRY----VETA I	.24			SYMMETRY----VETA I	.63
KURTOSIS----VETA II	-.37			KURTOSIS----VETA II	1.07

* * * * *				* * * * *		

NUMBER OF SUBJECTS	293			NUMBER OF SUBJECTS	491

10. Maximum Toe Height

Landmark: Maximum toe height location

Instrument: Adjustable block

Position of Subject: Subject stands erect, feet slightly apart, and weight distributed equally on both feet.

Procedure: With an adjustable block positioned anterior to the toe having the highest dorsal surface, measure the vertical distance from the standing surface to the maximum toe height landmark. Record the toe measured. (The great toe is excluded from consideration for this measurement).

VARIABLE NO. 10--MAXIMUM TOE HEIGHT   MALE DATA

-- INTERVALS --		ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
1.75 -	1.84	1	1	.34	.34
1.85 -	1.94	0	1	.00	.34
1.95 -	2.04	2	3	.68	1.02
2.05 -	2.14	7	10	2.39	3.41
2.15 -	2.24	25	35	8.53	11.95
2.25 -	2.34	29	64	9.90	21.84
2.35 -	2.44	47	111	16.04	37.88
2.45 -	2.54	54	165	18.43	56.31
2.55 -	2.64	39	204	13.31	69.62
2.65 -	2.74	25	229	8.53	78.16
2.75 -	2.84	27	256	9.22	87.37
2.85 -	2.94	16	272	5.46	92.83
2.95 -	3.04	10	282	3.41	96.25
3.05 -	3.14	3	285	1.02	97.27
3.15 -	3.24	5	290	1.71	98.98
3.25 -	3.34	2	292	.68	99.66
3.35 -	3.44	1	293	.34	100.00

VARIABLE NO. 10--MAXIMUM TOE HEIGHT   FEMALE DATA

-- INTERVALS --		ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
1.65 -	1.74	1	1	.20	.20
1.75 -	1.84	5	6	1.02	1.22
1.85 -	1.94	24	30	4.90	6.12
1.95 -	2.04	33	63	6.73	12.86
2.05 -	2.14	51	114	10.41	23.27
2.15 -	2.24	86	200	17.55	40.82
2.25 -	2.34	96	296	19.59	60.41
2.35 -	2.44	86	382	17.55	77.96
2.45 -	2.54	41	423	8.37	86.33
2.55 -	2.64	32	455	6.53	92.86
2.65 -	2.74	19	474	3.88	96.73
2.75 -	2.84	11	485	2.24	98.98
2.85 -	2.94	4	489	.82	99.80
2.95 -	3.04	0	489	.00	99.80
3.05 -	3.14	1	490	.20	100.00

VARIABLE NO. 10--MAXIMUM TOE HEIGHT

MALE DATA				FEMALE DATA		

* * * * *   * * * * *

PERCENTILES				PERCENTILES		
CENTIMETERS		INCHES		CENTIMETERS		INCHES
2.04	1ST	.80		1.82	1ST	.71
2.10	2ND	.83		1.87	2ND	.73
2.13	3RD	.84		1.90	3RD	.75
2.17	5TH	.86		1.94	5TH	.77
2.24	10TH	.88		2.02	10TH	.79
2.29	15TH	.90		2.07	15TH	.81
2.33	20TH	.92		2.11	20TH	.83
2.36	25TH	.93		2.15	25TH	.84
2.39	30TH	.94		2.18	30TH	.86
2.42	35TH	.95		2.21	35TH	.87
2.46	40TH	.97		2.24	40TH	.88
2.49	45TH	.98		2.27	45TH	.89
2.52	50TH	.99		2.29	50TH	.90
2.55	55TH	1.00		2.32	55TH	.91
2.59	60TH	1.02		2.35	60TH	.93
2.62	65TH	1.03		2.38	65TH	.94
2.66	70TH	1.05		2.42	70TH	.95
2.71	75TH	1.07		2.45	75TH	.96
2.76	80TH	1.09		2.49	80TH	.98
2.82	85TH	1.11		2.54	85TH	1.00
2.90	90TH	1.14		2.60	90TH	1.02
3.03	95TH	1.19		2.69	95TH	1.06
3.11	97TH	1.23		2.75	97TH	1.08
3.17	98TH	1.25		2.80	98TH	1.10
3.27	99TH	1.29		2.87	99TH	1.13

* * * * *   * * * * *

THE SUMMARY STATISTICS				THE SUMMARY STATISTICS		
CENTIMETERS		INCHES		CENTIMETERS		INCHES
2.55	MEAN	1.00		2.30	MEAN	.91
.02	SE(M)	.01		.01	SE(M)	.00
.26	ST DEV	.10		.22	ST DEV	.09
.01	SE(SD)	.00		.01	SE(SD)	.00

* * * * *   * * * * *

COEFF. OF VARIATION	10.2%		COEFF. OF VARIATION	9.7%
SYMMETRY----VETA I	.49		SYMMETRY----VETA I	.23
KURTOSIS----VETA II	.29		KURTOSIS----VETA II	.11

* * * * *   * * * * *

NUMBER OF SUBJECTS	293		NUMBER OF SUBJECTS	490

11. Outside BOF Height

Landmark: 5th metatarsal-phalangeal protrusion, dorsal aspect

Instrument: Adjustable block

Position of Subject: Subject stands erect, feet slightly apart, and weight distributed equally on both feet.

Procedure: With an adjustable block positioned on the lateral side of the foot, measure the vertical distance from the standing surface to the dorsal surface of the foot at the dorsal landmark of the 5th metatarsal-phalangeal joint.

VARIABLE NO. 11--OUTSIDE BOF HEIGHT   MALE DATA

-- INTERVALS --		-- FREQUENCIES --			
		ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
2.25 -	2.34	2	2	.68	.68
2.35 -	2.44	2	4	.68	1.37
2.45 -	2.54	15	19	5.12	6.48
2.55 -	2.64	25	44	8.53	15.02
2.65 -	2.74	29	73	9.90	24.91
2.75 -	2.84	49	122	16.72	41.64
2.85 -	2.94	45	167	15.36	57.00
2.95 -	3.04	44	211	15.02	72.01
3.05 -	3.14	24	235	8.19	80.20
3.15 -	3.24	24	259	8.19	88.40
3.25 -	3.34	8	267	2.73	91.13
3.35 -	3.44	14	281	4.78	95.90
3.45 -	3.54	4	285	1.37	97.27
3.55 -	3.64	2	287	.68	97.95
3.65 -	3.74	3	290	1.02	98.98
3.75 -	3.84	1	291	.34	99.32
3.85 -	3.94	1	292	.34	99.66
3.95 -	4.04	0	292	.00	99.66
4.05 -	4.14	1	293	.34	100.00

VARIABLE NO. 11--OUTSIDE BOF HEIGHT   FEMALE DATA

-- INTERVALS --		-- FREQUENCIES --			
		ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
2.05 -	2.14	2	2	.41	.41
2.15 -	2.24	7	9	1.43	1.83
2.25 -	2.34	20	29	4.07	5.91
2.35 -	2.44	41	70	8.35	14.26
2.45 -	2.54	64	134	13.03	27.29
2.55 -	2.64	85	219	17.31	44.60
2.65 -	2.74	70	289	14.26	58.86
2.75 -	2.84	71	360	14.46	73.32
2.85 -	2.94	63	423	12.83	86.15
2.95 -	3.04	37	460	7.54	93.69
3.05 -	3.14	20	480	4.07	97.76
3.15 -	3.24	8	488	1.63	99.39
3.25 -	3.34	0	488	.00	99.39
3.35 -	3.44	3	491	.61	100.00

VARIABLE NO. 11--OUTSIDE BOF HEIGHT

MALE DATA				FEMALE DATA		
* * * * *				* * * * *		

PERCENTILES				PERCENTILES		
CENTIMETERS		INCHES		CENTIMETERS		INCHES
2.40	1ST	.95		2.20	1ST	.87
2.45	2ND	.96		2.25	2ND	.88
2.48	3RD	.98		2.28	3RD	.90
2.53	5TH	1.00		2.33	5TH	.92
2.60	10TH	1.02		2.40	10TH	.94
2.66	15TH	1.05		2.45	15TH	.97
2.70	20TH	1.06		2.49	20TH	.98
2.74	25TH	1.08		2.53	25TH	1.00
2.77	30TH	1.09		2.57	30TH	1.01
2.81	35TH	1.10		2.60	35TH	1.02
2.84	40TH	1.12		2.63	40TH	1.04
2.87	45TH	1.13		2.66	45TH	1.05
2.90	50TH	1.14		2.69	50TH	1.06
2.94	55TH	1.16		2.72	55TH	1.07
2.97	60TH	1.17		2.75	60TH	1.08
3.01	65TH	1.18		2.79	65TH	1.10
3.05	70TH	1.20		2.82	70TH	1.11
3.09	75TH	1.22		2.86	75TH	1.12
3.15	80TH	1.24		2.90	80TH	1.14
3.21	85TH	1.26		2.94	85TH	1.16
3.30	90TH	1.30		3.00	90TH	1.18
3.44	95TH	1.35		3.09	95TH	1.21
3.54	97TH	1.40		3.14	97TH	1.23
3.63	98TH	1.43		3.17	98TH	1.25
3.77	99TH	1.48		3.22	99TH	1.27

* * * * *				* * * * *		

THE SUMMARY STATISTICS				THE SUMMARY STATISTICS		
CENTIMETERS		INCHES		CENTIMETERS		INCHES
2.93	MEAN	1.15		2.70	MEAN	1.06
.02	SE(M)	.01		.01	SE(M)	.00
.28	ST DEV	.11		.23	ST DEV	.09
.01	SE(SD)	.00		.01	SE(SD)	.00

* * * * *				* * * * *		

COEFF. OF VARIATION	9.6%		COEFF. OF VARIATION	8.5%
SYMMETRY----VETA I	.74		SYMMETRY----VETA I	.14
KURTOSIS----VETA II	1.12		KURTOSIS----VETA II	-.24

* * * * *				* * * * *		

NUMBER OF SUBJECTS	293		NUMBER OF SUBJECTS	491

12. Calf Circumference

Landmark: Calf level (maximum circumference)

Instrument: Tape

Position of Subject: Subject stands erect, heels approximately 10 cm apart, and weight distributed equally on both feet.

Procedure: With a tape held in a horizontal plane, measure the circumference of the calf at the level of the calf landmark.
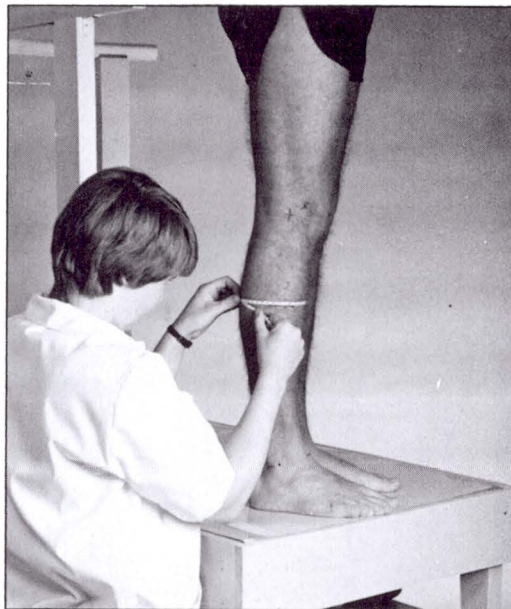
VARIABLE NO. 12--CALF CIRCUMFERENCE   MALE DATA

-- INTERVALS --		ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
29.95 -	30.24	1	1	.34	.34
30.25 -	30.54	1	2	.34	.68
30.55 -	30.84	0	2	.00	.68
30.85 -	31.14	1	3	.34	1.03
31.15 -	31.44	1	4	.34	1.37
31.45 -	31.74	2	6	.68	2.05
31.75 -	32.04	2	8	.68	2.74
32.05 -	32.34	5	13	1.71	4.45
32.35 -	32.64	5	18	1.71	6.16
32.65 -	32.94	4	22	1.37	7.53
32.95 -	33.24	3	25	1.03	8.56
33.25 -	33.54	5	30	1.71	10.27
33.55 -	33.84	4	34	1.37	11.64
33.85 -	34.14	7	41	2.40	14.04
34.15 -	34.44	8	49	2.74	16.78
34.45 -	34.74	8	57	2.74	19.52
34.75 -	35.04	11	68	3.77	23.29
35.05 -	35.34	7	75	2.40	25.68
35.35 -	35.64	13	88	4.45	30.14
35.65 -	35.94	17	105	5.82	35.96
35.95 -	36.24	15	120	5.14	41.10
36.25 -	36.54	16	136	5.48	46.58
36.55 -	36.84	14	150	4.79	51.37
36.85 -	37.14	9	159	3.08	54.45
37.15 -	37.44	9	168	3.08	57.53
37.45 -	37.74	10	178	3.42	60.96
37.75 -	38.04	20	198	6.85	67.81
38.05 -	38.34	7	205	2.40	70.21
38.35 -	38.64	9	214	3.08	73.29
38.65 -	38.94	9	223	3.08	76.37
38.95 -	39.24	12	235	4.11	80.48
39.25 -	39.54	4	239	1.37	81.85
39.55 -	39.84	3	242	1.03	82.88
39.85 -	40.14	11	253	3.77	86.64
40.15 -	40.44	6	259	2.05	88.70
40.45 -	40.74	8	267	2.74	91.44
40.75 -	41.04	4	271	1.37	92.81
41.05 -	41.34	6	277	2.05	94.86
41.35 -	41.64	3	280	1.03	95.89
41.65 -	41.94	2	282	.68	96.58
41.95 -	42.24	3	285	1.03	97.60
42.25 -	42.54	4	289	1.37	98.97
42.55 -	42.84	0	289	.00	98.97
42.85 -	43.14	1	290	.34	99.32
43.15 -	43.44	0	290	.00	99.32
43.45 -	43.74	2	292	.68	100.00

VARIABLE NO. 12--CALF CIRCUMFERENCE   FEMALE DATA

-- INTERVALS --		-- FREQUENCIES --			
		ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
29.05 -	29.34	1	1	.20	.20
29.35 -	29.64	0	1	.00	.20
29.65 -	29.94	0	1	.00	.20
29.95 -	30.24	1	2	.20	.41
30.25 -	30.54	1	3	.20	.61
30.55 -	30.84	3	6	.61	1.22
30.85 -	31.14	4	10	.82	2.04
31.15 -	31.44	6	16	1.22	3.27
31.45 -	31.74	8	24	1.63	4.90
31.75 -	32.04	9	33	1.84	6.73
32.05 -	32.34	10	43	2.04	8.78
32.35 -	32.64	7	50	1.43	10.20
32.65 -	32.94	23	73	4.69	14.90
32.95 -	33.24	18	91	3.67	18.57
33.25 -	33.54	15	106	3.06	21.63
33.55 -	33.84	23	129	4.69	26.33
33.85 -	34.14	26	155	5.31	31.63
34.15 -	34.44	22	177	4.49	36.12
34.45 -	34.74	26	203	5.31	41.43
34.75 -	35.04	35	238	7.14	48.57
35.05 -	35.34	19	257	3.88	52.45
35.35 -	35.64	24	281	4.90	57.35
35.65 -	35.94	30	311	6.12	63.47
35.95 -	36.24	31	342	6.33	69.80
36.25 -	36.54	23	365	4.69	74.49
36.55 -	36.84	18	383	3.67	78.16
36.85 -	37.14	24	407	4.90	83.06
37.15 -	37.44	23	430	4.69	87.76
37.45 -	37.74	12	442	2.45	90.20
37.75 -	38.04	16	458	3.27	93.47
38.05 -	38.34	11	469	2.24	95.71
38.35 -	38.64	5	474	1.02	96.73
38.65 -	38.94	5	479	1.02	97.76
38.95 -	39.24	0	479	.00	97.76
39.25 -	39.54	3	482	.61	98.37
39.55 -	39.84	2	484	.41	98.78
39.85 -	40.14	0	484	.00	98.78
40.15 -	40.44	3	487	.61	99.39
40.45 -	40.74	1	488	.20	99.59
40.75 -	41.04	1	489	.20	99.80
41.05 -	41.34	0	489	.00	99.80
41.35 -	41.64	0	489	.00	99.80
41.65 -	41.94	0	489	.00	99.80
41.95 -	42.24	0	489	.00	99.80
42.25 -	42.54	0	489	.00	99.80
42.55 -	42.84	0	489	.00	99.80
42.85 -	43.14	0	489	.00	99.80
43.15 -	43.44	0	489	.00	99.80
43.45 -	43.74	0	489	.00	99.80
43.75 -	44.04	1	490	.20	100.00

VARIABLE NO. 12--CALF CIRCUMFERENCE

MALE DATA				FEMALE DATA		

* * * * *   * * * * *

PERCENTILES				PERCENTILES		
CENTIMETERS		INCHES		CENTIMETERS		INCHES
31.06	1ST	12.23		30.81	1ST	12.13
31.71	2ND	12.48		31.10	2ND	12.24
32.12	3RD	12.65		31.35	3RD	12.34
32.68	5TH	12.87		31.75	5TH	12.50
33.56	10TH	13.21		32.47	10TH	12.78
34.17	15TH	13.45		33.00	15TH	12.99
34.66	20TH	13.65		33.42	20TH	13.16
35.10	25TH	13.82		33.79	25TH	13.30
35.49	30TH	13.97		34.12	30TH	13.43
35.86	35TH	14.12		34.42	35TH	13.55
36.22	40TH	14.26		34.70	40TH	13.66
36.57	45TH	14.40		34.97	45TH	13.77
36.92	50TH	14.53		35.23	50TH	13.87
37.27	55TH	14.67		35.48	55TH	13.97
37.63	60TH	14.81		35.73	60TH	14.07
38.00	65TH	14.96		35.99	65TH	14.17
38.39	70TH	15.12		36.25	70TH	14.27
38.82	75TH	15.28		36.53	75TH	14.38
39.30	80TH	15.47		36.84	80TH	14.50
39.84	85TH	15.68		37.20	85TH	14.65
40.51	90TH	15.95		37.66	90TH	14.83
41.45	95TH	16.32		38.39	95TH	15.12
42.00	97TH	16.54		38.93	97TH	15.32
42.38	98TH	16.68		39.36	98TH	15.50
42.89	99TH	16.89		40.14	99TH	15.80

* * * * *   * * * * *

THE SUMMARY STATISTICS				THE SUMMARY STATISTICS		
CENTIMETERS		INCHES		CENTIMETERS		INCHES
36.97	MEAN	14.55		35.18	MEAN	13.85
.16	SE(M)	.06		.09	SE(M)	.04
2.66	ST DEV	1.05		2.04	ST DEV	.80
.11	SE(SD)	.04		.07	SE(SD)	.03

* * * * *   * * * * *

COEFF. OF VARIATION	7.2%		COEFF. OF VARIATION	5.8%
SYMMETRY----VETA I	.04		SYMMETRY----VETA I	.12
KURTOSIS----VETA II	-.36		KURTOSIS----VETA II	.29

* * * * *   * * * * *

NUMBER OF SUBJECTS	292		NUMBER OF SUBJECTS	490

13. Ankle Circumference

Landmark: Ankle level (minimum circumference)

Instrument: Tape

Position of Subject: Subject stands erect, feet slightly apart, and weight distributed equally on both feet.

Procedure: With a tape held in a horizontal plane, measure the minimum circumference of the leg at the level of the ankle landmark.
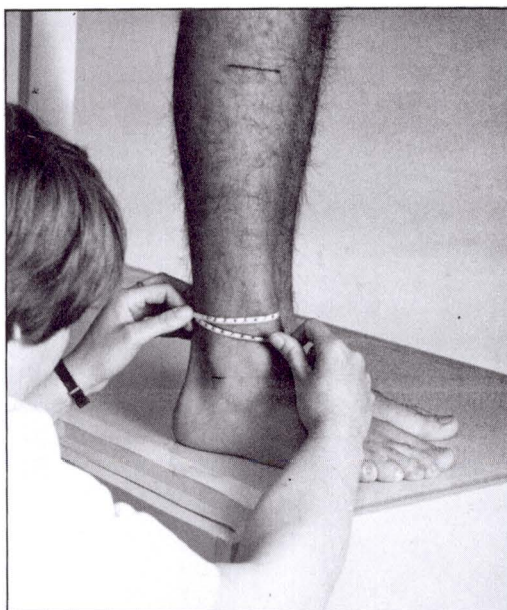
VARIABLE NO. 13--ANKLE CIRCUMFER   MALE DATA

-- INTERVALS --		-- FREQUENCIES --			
		ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
18.75 -	18.94	1	1	.34	.34
18.95 -	19.14	0	1	.00	.34
19.15 -	19.34	2	3	.68	1.03
19.35 -	19.54	0	3	.00	1.03
19.55 -	19.74	0	3	.00	1.03
19.75 -	19.94	2	5	.68	1.71
19.95 -	20.14	9	14	3.08	4.79
20.15 -	20.34	3	17	1.03	5.82
20.35 -	20.54	11	28	3.77	9.59
20.55 -	20.74	10	38	3.42	13.01
20.75 -	20.94	7	45	2.40	15.41
20.95 -	21.14	13	58	4.45	19.86
21.15 -	21.34	14	72	4.79	24.66
21.35 -	21.54	17	89	5.82	30.48
21.55 -	21.74	15	104	5.14	35.62
21.75 -	21.94	16	120	5.48	41.10
21.95 -	22.14	17	137	5.82	46.92
22.15 -	22.34	19	156	6.51	53.42
22.35 -	22.54	15	171	5.14	58.56
22.55 -	22.74	7	178	2.40	60.96
22.75 -	22.94	16	194	5.48	66.44
22.95 -	23.14	15	209	5.14	71.58
23.15 -	23.34	8	217	2.74	74.32
23.35 -	23.54	14	231	4.79	79.11
23.55 -	23.74	8	239	2.74	81.85
23.75 -	23.94	7	246	2.40	84.25
23.95 -	24.14	10	256	3.42	87.67
24.15 -	24.34	8	264	2.74	90.41
24.35 -	24.54	9	273	3.08	93.49
24.55 -	24.74	4	277	1.37	94.86
24.75 -	24.94	4	281	1.37	96.23
24.95 -	25.14	4	285	1.37	97.60
25.15 -	25.34	1	286	.34	97.95
25.35 -	25.54	1	287	.34	98.29
25.55 -	25.74	2	289	.68	98.97
25.75 -	25.94	0	289	.00	98.97
25.95 -	26.14	2	291	.68	99.66
26.15 -	26.34	0	291	.00	99.66
26.35 -	26.54	0	291	.00	99.66
26.55 -	26.74	0	291	.00	99.66
26.75 -	26.94	1	292	.34	100.00

84

VARIABLE NO. 13--ANKLE CIRCUMFER   FEMALE DATA

-- INTERVALS --		ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
17.35 -	17.54	1	1	.20	.20
17.55 -	17.74	0	1	.00	.20
17.75 -	17.94	1	2	.20	.41
17.95 -	18.14	1	3	.20	.61
18.15 -	18.34	0	3	.00	.61
18.35 -	18.54	6	9	1.23	1.84
18.55 -	18.74	7	16	1.43	3.27
18.75 -	18.94	4	20	.82	4.09
18.95 -	19.14	14	34	2.86	6.95
19.15 -	19.34	11	45	2.25	9.20
19.35 -	19.54	20	65	4.09	13.29
19.55 -	19.74	16	81	3.27	16.56
19.75 -	19.94	21	102	4.29	20.86
19.95 -	20.14	26	128	5.32	26.18
20.15 -	20.34	41	169	8.38	34.56
20.35 -	20.54	32	201	6.54	41.10
20.55 -	20.74	22	223	4.50	45.60
20.75 -	20.94	33	256	6.75	52.35
20.95 -	21.14	52	308	10.63	62.99
21.15 -	21.34	28	336	5.73	68.71
21.35 -	21.54	34	370	6.95	75.66
21.55 -	21.74	26	396	5.32	80.98
21.75 -	21.94	22	418	4.50	85.48
21.95 -	22.14	16	434	3.27	88.75
22.15 -	22.34	16	450	3.27	92.02
22.35 -	22.54	14	464	2.86	94.89
22.55 -	22.74	5	469	1.02	95.91
22.75 -	22.94	6	475	1.23	97.14
22.95 -	23.14	4	479	.82	97.96
23.15 -	23.34	2	481	.41	98.36
23.35 -	23.54	2	483	.41	98.77
23.55 -	23.74	2	485	.41	99.18
23.75 -	23.94	1	486	.20	99.39
23.95 -	24.14	1	487	.20	99.59
24.15 -	24.34	0	487	.00	99.59
24.35 -	24.54	1	488	.20	99.80
24.55 -	24.74	0	488	.00	99.80
24.75 -	24.94	0	488	.00	99.80
24.95 -	25.14	1	489	.20	100.00

VARIABLE NO. 13--ANKLE CIRCUMFER

MALE DATA				FEMALE DATA		
* * * * *				* * * * *		
PERCENTILES				PERCENTILES		
CENTIMETERS		INCHES		CENTIMETERS		INCHES
19.49	1ST	7.67		18.40	1ST	7.24
19.78	2ND	7.79		18.59	2ND	7.32
19.97	3RD	7.86		18.75	3RD	7.38
20.22	5TH	7.96		18.98	5TH	7.47
20.63	10TH	8.12		19.38	10TH	7.63
20.92	15TH	8.23		19.66	15TH	7.74
21.15	20TH	8.33		19.89	20TH	7.83
21.36	25TH	8.41		20.08	25TH	7.91
21.56	30TH	8.49		20.26	30TH	7.97
21.75	35TH	8.56		20.41	35TH	8.04
21.93	40TH	8.63		20.56	40TH	8.10
22.11	45TH	8.70		20.70	45TH	8.15
22.29	50TH	8.77		20.84	50TH	8.20
22.47	55TH	8.85		20.97	55TH	8.26
22.66	60TH	8.92		21.11	60TH	8.31
22.86	65TH	9.00		21.24	65TH	8.36
23.07	70TH	9.08		21.39	70TH	8.42
23.31	75TH	9.18		21.54	75TH	8.48
23.57	80TH	9.28		21.71	80TH	8.55
23.88	85TH	9.40		21.92	85TH	8.63
24.28	90TH	9.56		22.18	90TH	8.73
24.85	95TH	9.78		22.61	95TH	8.90
25.20	97TH	9.92		22.93	97TH	9.03
25.46	98TH	10.02		23.18	98TH	9.13
25.83	99TH	10.17		23.65	99TH	9.31

* * * * *				* * * * *		
THE SUMMARY STATISTICS				THE SUMMARY STATISTICS		
CENTIMETERS		INCHES		CENTIMETERS		INCHES
22.38	MEAN	8.81		20.82	MEAN	8.20
.08	SE(M)	.03		.05	SE(M)	.02
1.40	ST DEV	.55		1.11	ST DEV	.44
.06	SE(SD)	.02		.04	SE(SD)	.01

* * * * *			* * * * *	
COEFF. OF VARIATION		6.3%	COEFF. OF VARIATION	5.3%
SYMMETRY----VETA I		.30	SYMMETRY----VETA I	.13
KURTOSIS----VETA II		-.25	KURTOSIS----VETA II	.33

* * * * *		* * * * *	
NUMBER OF SUBJECTS	292	NUMBER OF SUBJECTS	489

14. Heel-Ankle Circumference

Landmark: Dorsal junction of the foot and leg

Instrument: Tape

Position of Subject: Subject stands erect, feet slightly apart, and weight distributed equally on both feet.

Procedure: Measure the diagonal circumference of the foot with the tape passing over the foot-leg landmark and around the base of the heel.
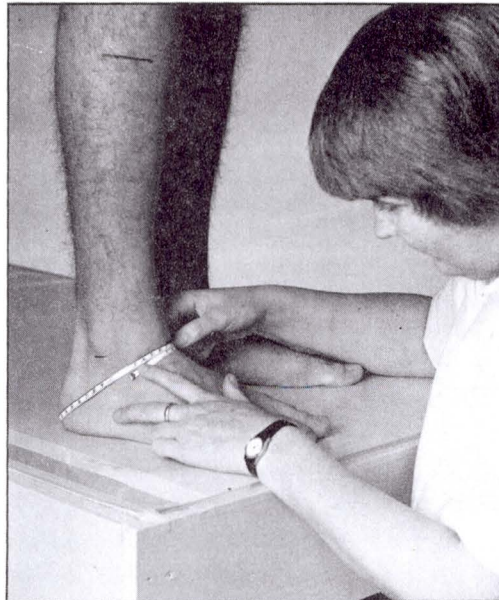
VARIABLE NO. 14--HEEL-ANKLE CIRCUM   MALE DATA

-- INTERVALS --		ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
25.75 -	26.04	1	1	.34	.34
26.05 -	26.34	0	1	.00	.34
26.35 -	26.64	0	1	.00	.34
26.65 -	26.94	0	1	.00	.34
26.95 -	27.24	0	1	.00	.34
27.25 -	27.54	0	1	.00	.34
27.55 -	27.84	0	1	.00	.34
27.85 -	28.14	0	1	.00	.34
28.15 -	28.44	0	1	.00	.34
28.45 -	28.74	0	1	.00	.34
28.75 -	29.04	0	1	.00	.34
29.05 -	29.34	0	1	.00	.34
29.35 -	29.64	0	1	.00	.34
29.65 -	29.94	0	1	.00	.34
29.95 -	30.24	1	2	.34	.69
30.25 -	30.54	1	3	.34	1.03
30.55 -	30.84	1	4	.34	1.38
30.85 -	31.14	6	10	2.07	3.45
31.15 -	31.44	2	12	.69	4.14
31.45 -	31.74	6	18	2.07	6.21
31.75 -	32.04	3	21	1.03	7.24
32.05 -	32.34	22	43	7.59	14.83
32.35 -	32.64	8	51	2.76	17.59
32.65 -	32.94	10	61	3.45	21.03
32.95 -	33.24	20	81	6.90	27.93
33.25 -	33.54	15	96	5.17	33.10
33.55 -	33.84	20	116	6.90	40.00
33.85 -	34.14	19	135	6.55	46.55
34.15 -	34.44	26	161	8.97	55.52
34.45 -	34.74	14	175	4.83	60.34
34.75 -	35.04	21	196	7.24	67.59
35.05 -	35.34	19	215	6.55	74.14
35.35 -	35.64	13	228	4.48	78.62
35.65 -	35.94	10	238	3.45	82.07
35.95 -	36.24	11	249	3.79	85.86
36.25 -	36.54	17	266	5.86	91.72
36.55 -	36.84	8	274	2.76	94.48
36.85 -	37.14	4	278	1.38	95.86
37.15 -	37.44	2	280	.69	96.55
37.45 -	37.74	4	284	1.38	97.93
37.75 -	38.04	2	286	.69	98.62
38.05 -	38.34	2	288	.69	99.31
38.35 -	38.64	1	289	.34	99.66
38.65 -	38.94	1	290	.34	100.00

VARIABLE NO. 14--HEEL-ANKLE CIRCUM   FEMALE DATA

-- INTERVALS --

		ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
24.85 -	25.14	1	1	.20	.20
25.15 -	25.44	0	1	.00	.20
25.45 -	25.74	0	1	.00	.20
25.75 -	26.04	0	1	.00	.20
26.05 -	26.34	0	1	.00	.20
26.35 -	26.64	0	1	.00	.20
26.65 -	26.94	0	1	.00	.20
26.95 -	27.24	1	2	.20	.41
27.25 -	27.54	4	6	.82	1.23
27.55 -	27.84	1	7	.20	1.43
27.85 -	28.14	3	10	.61	2.05
28.15 -	28.44	4	14	.82	2.87
28.45 -	28.74	10	24	2.05	4.92
28.75 -	29.04	23	47	4.71	9.63
29.05 -	29.34	15	62	3.07	12.70
29.35 -	29.64	32	94	6.56	19.26
29.65 -	29.94	21	115	4.30	23.57
29.95 -	30.24	40	155	8.20	31.76
30.25 -	30.54	47	202	9.63	41.39
30.55 -	30.84	33	235	6.76	48.16
30.85 -	31.14	53	288	10.86	59.02
31.15 -	31.44	36	324	7.38	66.39
31.45 -	31.74	43	367	8.81	75.20
31.75 -	32.04	34	401	6.97	82.17
32.05 -	32.34	13	414	2.66	84.84
32.35 -	32.64	20	434	4.10	88.93
32.65 -	32.94	13	447	2.66	91.60
32.95 -	33.24	13	460	2.66	94.26
33.25 -	33.54	10	470	2.05	96.31
33.55 -	33.84	6	476	1.23	97.54
33.85 -	34.14	7	483	1.43	98.98
34.15 -	34.44	2	485	.41	99.39
34.45 -	34.74	0	485	.00	99.39
34.75 -	35.04	1	486	.20	99.59
35.05 -	35.34	0	486	.00	99.59
35.35 -	35.64	1	487	.20	99.80
35.65 -	35.94	1	488	.20	100.00

VARIABLE NO. 14--HEEL-ANKLE CIRCUM

	MALE DATA				FEMALE DATA	
	* * * * *				* * * * *	

	PERCENTILES				PERCENTILES	
CENTIMETERS		INCHES		CENTIMETERS		INCHES
30.53	1ST	12.02		27.53	1ST	10.84
30.90	2ND	12.17		28.07	2ND	11.05
31.16	3RD	12.27		28.37	3RD	11.17
31.52	5TH	12.41		28.73	5TH	11.31
32.10	10TH	12.64		29.22	10TH	11.50
32.50	15TH	12.80		29.53	15TH	11.62
32.83	20TH	12.92		29.76	20TH	11.72
33.11	25TH	13.04		29.97	25TH	11.80
33.37	30TH	13.14		30.15	30TH	11.87
33.61	35TH	13.23		30.32	35TH	11.94
33.84	40TH	13.32		30.49	40TH	12.01
34.06	45TH	13.41		30.66	45TH	12.07
34.28	50TH	13.49		30.83	50TH	12.14
34.49	55TH	13.58		31.00	55TH	12.21
34.72	60TH	13.67		31.18	60TH	12.28
34.94	65TH	13.76		31.37	65TH	12.35
35.18	70TH	13.85		31.58	70TH	12.43
35.44	75TH	13.95		31.81	75TH	12.52
35.73	80TH	14.07		32.07	80TH	12.63
36.06	85TH	14.20		32.38	85TH	12.75
36.48	90TH	14.36		32.77	90TH	12.90
37.09	95TH	14.60		33.33	95TH	13.12
37.48	97TH	14.76		33.67	97TH	13.26
37.77	98TH	14.87		33.90	98TH	13.35
38.22	99TH	15.05		34.22	99TH	13.47

* * * * *   * * * * *

THE SUMMARY STATISTICS				THE SUMMARY STATISTICS		
CENTIMETERS		INCHES		CENTIMETERS		INCHES
34.28	MEAN	13.50		30.89	MEAN	12.16
.10	SE(M)	.04		.06	SE(M)	.03
1.72	ST DEV	.68		1.41	ST DEV	.56
.07	SE(SD)	.03		.05	SE(SD)	.02

* * * * *   * * * * *

COEFF. OF VARIATION	5.0%		COEFF. OF VARIATION	4.6%
SYMMETRY----VETA I	-.30		SYMMETRY----VETA I	.07
KURTOSIS----VETA II	1.28		KURTOSIS----VETA II	.63

* * * * *   * * * * *

NUMBER OF SUBJECTS	290		NUMBER OF SUBJECTS	488

15.   Instep Circumference

Landmark: Minimum instep circumference plane

Instrument: Tape

Position of Subject: Subject stands erect, feet slightly apart, and weight distributed equally on both feet.

Procedure: With a tape held in a vertical plane, measure the circumference of the instep over the medial, dorsal, and lateral instep circumference landmarks.
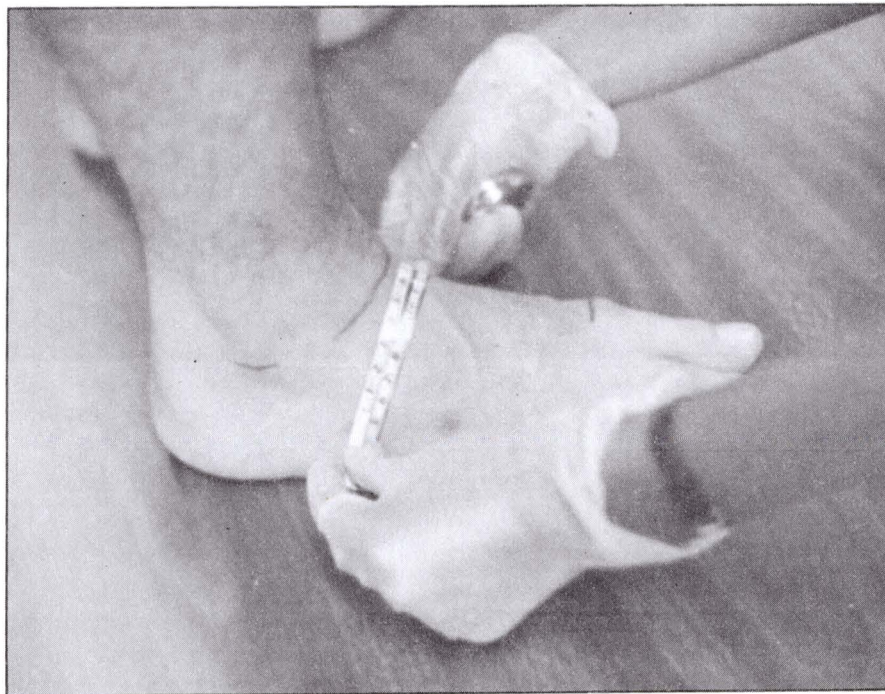
VARIABLE NO. 15--INSTEP CIRCUMFER   MALE DATA

-- INTERVALS --		-- FREQUENCIES --			
		ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
22.35 -	22.54	1	1	.34	.34
22.55 -	22.74	0	1	.00	.34
22.75 -	22.94	0	1	.00	.34
22.95 -	23.14	2	3	.69	1.03
23.15 -	23.34	1	4	.34	1.37
23.35 -	23.54	3	7	1.03	2.41
23.55 -	23.74	1	8	.34	2.75
23.75 -	23.94	3	11	1.03	3.78
23.95 -	24.14	7	18	2.41	6.19
24.15 -	24.34	7	25	2.41	8.59
24.35 -	24.54	8	33	2.75	11.34
24.55 -	24.74	7	40	2.41	13.75
24.75 -	24.94	6	46	2.06	15.81
24.95 -	25.14	20	66	6.87	22.68
25.15 -	25.34	13	79	4.47	27.15
25.35 -	25.54	22	101	7.56	34.71
25.55 -	25.74	12	113	4.12	38.83
25.75 -	25.94	19	132	6.53	45.36
25.95 -	26.14	20	152	6.87	52.23
26.15 -	26.34	18	170	6.19	58.42
26.35 -	26.54	17	187	5.84	64.26
26.55 -	26.74	14	201	4.81	69.07
26.75 -	26.94	13	214	4.47	73.54
26.95 -	27.14	11	225	3.78	77.32
27.15 -	27.34	7	232	2.41	79.73
27.35 -	27.54	13	245	4.47	84.19
27.55 -	27.74	6	251	2.06	86.25
27.75 -	27.94	10	261	3.44	89.69
27.95 -	28.14	6	267	2.06	91.75
28.15 -	28.34	7	274	2.41	94.16
28.35 -	28.54	3	277	1.03	95.19
28.55 -	28.74	5	282	1.72	96.91
28.75 -	28.94	3	285	1.03	97.94
28.95 -	29.14	2	287	.69	98.63
29.15 -	29.34	3	290	1.03	99.66
29.35 -	29.54	1	291	.34	100.00

VARIABLE NO. 15--INSTEP CIRCUMFER   FEMALE DATA

-- INTERVALS --		ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
18.75 -	18.94	1	1	.20	.20
18.95 -	19.14	0	1	.00	.20
19.15 -	19.34	0	1	.00	.20
19.35 -	19.54	0	1	.00	.20
19.55 -	19.74	0	1	.00	.20
19.75 -	19.94	0	1	.00	.20
19.95 -	20.14	0	1	.00	.20
20.15 -	20.34	1	2	.20	.41
20.35 -	20.54	0	2	.00	.41
20.55 -	20.74	0	2	.00	.41
20.75 -	20.94	1	3	.20	.61
20.95 -	21.14	1	4	.20	.82
21.15 -	21.34	8	12	1.64	2.45
21.35 -	21.54	14	26	2.86	5.32
21.55 -	21.74	5	31	1.02	6.34
21.75 -	21.94	16	47	3.27	9.61
21.95 -	22.14	10	57	2.04	11.66
22.15 -	22.34	17	74	3.48	15.13
22.35 -	22.54	45	119	9.20	24.34
22.55 -	22.74	26	145	5.32	29.65
22.75 -	22.94	34	179	6.95	36.61
22.95 -	23.14	54	233	11.04	47.65
23.15 -	23.34	35	268	7.16	54.81
23.35 -	23.54	35	303	7.16	61.96
23.55 -	23.74	24	327	4.91	66.87
23.75 -	23.94	30	357	6.13	73.01
23.95 -	24.14	29	386	5.93	78.94
24.15 -	24.34	23	409	4.70	83.64
24.35 -	24.54	28	437	5.73	89.37
24.55 -	24.74	9	446	1.84	91.21
24.75 -	24.94	11	457	2.25	93.46
24.95 -	25.14	10	467	2.04	95.50
25.15 -	25.34	6	473	1.23	96.73
25.35 -	25.54	8	481	1.64	98.36
25.55 -	25.74	4	485	.82	99.18
25.75 -	25.94	2	487	.41	99.59
25.95 -	26.14	0	487	.00	99.59
26.15 -	26.34	0	487	.00	99.59
26.35 -	26.54	0	487	.00	99.59
26.55 -	26.74	0	487	.00	99.59
26.75 -	26.94	1	488	.20	99.80
26.95 -	27.14	0	488	.00	99.80
27.15 -	27.34	0	488	.00	99.80
27.35 -	27.54	1	489	.20	100.00

VARIABLE NO. 15--INSTEP CIRCUMFER

MALE DATA				FEMALE DATA		
* * * * *				* * * * *		

PERCENTILES				PERCENTILES		
CENTIMETERS		INCHES		CENTIMETERS		INCHES
23.10	1ST	9.09		21.10	1ST	8.31
23.53	2ND	9.26		21.31	2ND	8.39
23.78	3RD	9.36		21.45	3RD	8.45
24.08	5TH	9.48		21.65	5TH	8.53
24.52	10TH	9.65		21.98	10TH	8.65
24.80	15TH	9.77		22.21	15TH	8.75
25.03	20TH	9.85		22.40	20TH	8.82
25.23	25TH	9.93		22.57	25TH	8.89
25.41	30TH	10.00		22.72	30TH	8.95
25.58	35TH	10.07		22.86	35TH	9.00
25.75	40TH	10.14		23.00	40TH	9.06
25.92	45TH	10.20		23.14	45TH	9.11
26.09	50TH	10.27		23.27	50TH	9.16
26.26	55TH	10.34		23.40	55TH	9.21
26.44	60TH	10.41		23.54	60TH	9.27
26.63	65TH	10.48		23.69	65TH	9.33
26.83	70TH	10.56		23.84	70TH	9.39
27.06	75TH	10.65		24.00	75TH	9.45
27.31	80TH	10.75		24.19	80TH	9.52
27.60	85TH	10.87		24.40	85TH	9.61
27.97	90TH	11.01		24.67	90TH	9.71
28.48	95TH	11.21		25.06	95TH	9.87
28.78	97TH	11.33		25.31	97TH	9.97
28.98	98TH	11.41		25.49	98TH	10.04
29.22	99TH	11.51		25.76	99TH	10.14

* * * * *   * * * * *

THE SUMMARY STATISTICS				THE SUMMARY STATISTICS		
CENTIMETERS		INCHES		CENTIMETERS		INCHES
26.16	MEAN	10.30		23.30	MEAN	9.17
.08	SE(M)	.03		.05	SE(M)	.02
1.33	ST DEV	.52		1.05	ST DEV	.41
.06	SE(SD)	.02		.03	SE(SD)	.01

* * * * *   * * * * *

COEFF. OF VARIATION	5.1%		COEFF. OF VARIATION	4.5%
SYMMETRY----VETA I	.13		SYMMETRY----VETA I	.15
KURTOSIS----VETA II	-.27		KURTOSIS----VETA II	.65

* * * * *   * * * * *

NUMBER OF SUBJECTS	291		NUMBER OF SUBJECTS	489

16. BOF Circumference, Right

Landmark: 1st and 5th metatarsal-phalangeal protrusions

Instrument: Tape

Position of Subject: Subject stands erect, feet slightly apart, and weight distributed equally on both feet.

Procedure: With a tape, measure the maximum circumference of the right foot over the 1st and 5th metatarsal-phalangeal landmarks. The measurement is in a plane oblique to the long axis of the foot.
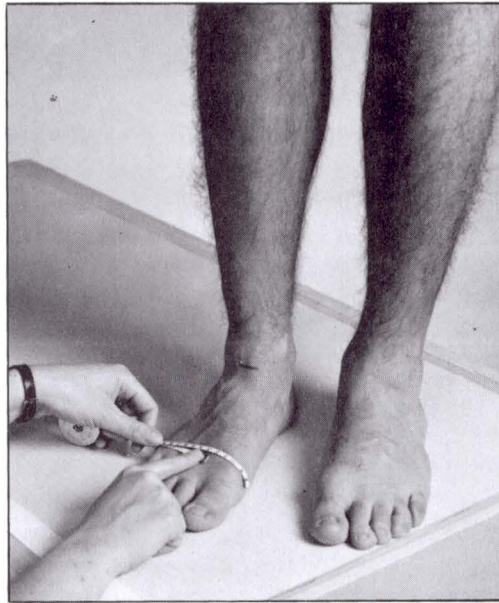
-- INTERVALS --		ACTUAL FREQ.	-- FREQUENCIES -- CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
21.95 -	22.14	2	2	.68	.68
22.15 -	22.34	2	4	.68	1.37
22.35 -	22.54	2	6	.68	2.05
22.55 -	22.74	0	6	.00	2.05
22.75 -	22.94	3	9	1.03	3.08
22.95 -	23.14	2	11	.68	3.77
23.15 -	23.34	6	17	2.05	5.82
23.35 -	23.54	9	26	3.08	8.90
23.55 -	23.74	8	34	2.74	11.64
23.75 -	23.94	15	49	5.14	16.78
23.95 -	24.14	12	61	4.11	20.89
24.15 -	24.34	16	77	5.48	26.37
24.35 -	24.54	18	95	6.16	32.53
24.55 -	24.74	24	119	8.22	40.75
24.75 -	24.94	20	139	6.85	47.60
24.95 -	25.14	17	156	5.82	53.42
25.15 -	25.34	10	166	3.42	56.85
25.35 -	25.54	14	180	4.79	61.64
25.55 -	25.74	11	191	3.77	65.41
25.75 -	25.94	15	206	5.14	70.55
25.95 -	26.14	15	221	5.14	75.68
26.15 -	26.34	20	241	6.85	82.53
26.35 -	26.54	10	251	3.42	85.96
26.55 -	26.74	10	261	3.42	89.38
26.75 -	26.94	4	265	1.37	90.75
26.95 -	27.14	5	270	1.71	92.47
27.15 -	27.34	4	274	1.37	93.84
27.35 -	27.54	3	277	1.03	94.86
27.55 -	27.74	7	284	2.40	97.26
27.75 -	27.94	4	288	1.37	98.63
27.95 -	28.14	3	291	1.03	99.66
28.15 -	28.34	0	291	.00	99.66
28.35 -	28.54	1	292	.34	100.00

VARIABLE NO.   16--BOF CIRCUM,RIGHT   FEMALE DATA

-- INTERVALS --		-- FREQUENCIES --			
		ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
18.55 -	18.74	1	1	.20	.20
18.75 -	18.94	0	1	.00	.20
18.95 -	19.14	0	1	.00	.20
19.15 -	19.34	0	1	.00	.20
19.35 -	19.54	0	1	.00	.20
19.55 -	19.74	0	1	.00	.20
19.75 -	19.94	0	1	.00	.20
19.95 -	20.14	0	1	.00	.20
20.15 -	20.34	1	2	.20	.41
20.35 -	20.54	7	9	1.43	1.84
20.55 -	20.74	6	15	1.22	3.06
20.75 -	20.94	3	18	.61	3.67
20.95 -	21.14	16	34	3.27	6.94
21.15 -	21.34	19	53	3.88	10.82
21.35 -	21.54	23	76	4.69	15.51
21.55 -	21.74	18	94	3.67	19.18
21.75 -	21.94	26	120	5.31	24.49
21.95 -	22.14	41	161	8.37	32.86
22.15 -	22.34	30	191	6.12	38.98
22.35 -	22.54	47	238	9.59	48.57
22.55 -	22.74	30	268	6.12	54.69
22.75 -	22.94	38	306	7.76	62.45
22.95 -	23.14	38	344	7.76	70.20
23.15 -	23.34	22	366	4.49	74.69
23.35 -	23.54	26	392	5.31	80.00
23.55 -	23.74	18	410	3.67	83.67
23.75 -	23.94	25	435	5.10	88.78
23.95 -	24.14	16	451	3.27	92.04
24.15 -	24.34	11	462	2.24	94.29
24.35 -	24.54	8	470	1.63	95.92
24.55 -	24.74	3	473	.61	96.53
24.75 -	24.94	7	480	1.43	97.96
24.95 -	25.14	3	483	.61	98.57
25.15 -	25.34	3	486	.61	99.18
25.35 -	25.54	1	487	.20	99.39
25.55 -	25.74	0	487	.00	99.39
25.75 -	25.94	0	487	.00	99.39
25.95 -	26.14	0	487	.00	99.39
26.15 -	26.34	0	487	.00	99.39
26.35 -	26.54	2	489	.41	99.80
26.55 -	26.74	1	490	.20	100.00

VARIABLE NO. 16--BOF CIRCUM,RIGHT

MALE DATA

* * * * *

FEMALE DATA

* * * * *

PERCENTILES				PERCENTILES		
CENTIMETERS		INCHES		CENTIMETERS		INCHES
22.20	1ST	8.74		20.40	1ST	8.03
22.66	2ND	8.92		20.62	2ND	8.12
22.91	3RD	9.02		20.77	3RD	8.18
23.21	5TH	9.14		20.99	5TH	8.26
23.62	10TH	9.30		21.32	10TH	8.40
23.89	15TH	9.40		21.56	15TH	8.49
24.10	20TH	9.49		21.75	20TH	8.56
24.28	25TH	9.56		21.92	25TH	8.63
24.45	30TH	9.63		22.07	30TH	8.69
24.62	35TH	9.69		22.22	35TH	8.75
24.78	40TH	9.75		22.35	40TH	8.80
24.94	45TH	9.82		22.49	45TH	8.85
25.10	50TH	9.88		22.62	50TH	8.91
25.27	55TH	9.95		22.75	55TH	8.96
25.44	60TH	10.02		22.89	60TH	9.01
25.63	65TH	10.09		23.03	65TH	9.07
25.83	70TH	10.17		23.19	70TH	9.13
26.05	75TH	10.26		23.35	75TH	9.19
26.31	80TH	10.36		23.54	80TH	9.27
26.60	85TH	10.47		23.76	85TH	9.35
26.96	90TH	10.61		24.04	90TH	9.47
27.45	95TH	10.81		24.47	95TH	9.63
27.71	97TH	10.91		24.76	97TH	9.75
27.87	98TH	10.97		24.97	98TH	9.83
28.03	99TH	11.04		25.31	99TH	9.96

* * * * *

* * * * *

THE SUMMARY STATISTICS				THE SUMMARY STATISTICS		
CENTIMETERS		INCHES		CENTIMETERS		INCHES
25.18	MEAN	9.91		22.66	MEAN	8.92
.07	SE(M)	.03		.05	SE(M)	.02
1.27	ST DEV	.50		1.07	ST DEV	.42
.05	SE(SD)	.02		.03	SE(SD)	.01

* * * * *

* * * * *

COEFF. OF VARIATION	5.0%		COEFF. OF VARIATION	4.7%
SYMMETRY----VETA I	.15		SYMMETRY----VETA I	.27
KURTOSIS----VETA II	-.35		KURTOSIS----VETA II	.56

* * * * *

* * * * *

NUMBER OF SUBJECTS	292		NUMBER OF SUBJECTS	490

17. Heel Breadth, Right

Landmark: None

Instrument: Sliding Caliper

Position of Subject: Subject stands erect, feet slightly apart, and weight distributed equally on both feet.

Procedure: With a sliding caliper held parallel to the long axis of the foot, measure the maximum horizontal breadth of the right heel. The measurement is perpendicular to the long axis of the foot.

VARIABLE NO. 17--HEEL BREADTH, RIGHT   MALE DATA

-- INTERVALS --		ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
5.85 -	5.94	1	1	.34	.34
5.95 -	6.04	1	2	.34	.68
6.05 -	6.14	2	4	.68	1.37
6.15 -	6.24	8	12	2.73	4.10
6.25 -	6.34	4	16	1.37	5.46
6.35 -	6.44	10	26	3.41	8.87
6.45 -	6.54	17	43	5.80	14.68
6.55 -	6.64	25	68	8.53	23.21
6.65 -	6.74	17	85	5.80	29.01
6.75 -	6.84	13	98	4.44	33.45
6.85 -	6.94	22	120	7.51	40.96
6.95 -	7.04	42	162	14.33	55.29
7.05 -	7.14	23	185	7.85	63.14
7.15 -	7.24	27	212	9.22	72.35
7.25 -	7.34	20	232	6.83	79.18
7.35 -	7.44	14	246	4.78	83.96
7.45 -	7.54	17	263	5.80	89.76
7.55 -	7.64	8	271	2.73	92.49
7.65 -	7.74	6	277	2.05	94.54
7.75 -	7.84	4	281	1.37	95.90
7.85 -	7.94	4	285	1.37	97.27
7.95 -	8.04	1	286	.34	97.61
8.05 -	8.14	3	289	1.02	98.63
8.15 -	8.24	2	291	.68	99.32
8.25 -	8.34	0	291	.00	99.32
8.35 -	8.44	1	292	.34	99.66
8.45 -	8.54	1	293	.34	100.00

VARIABLE NO. 17--HEEL BREADTH,RIGHT   FEMALE DATA

-- INTERVALS --		ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
5.25 -	5.34	1	1	.20	.20
5.35 -	5.44	2	3	.41	.61
5.45 -	5.54	2	5	.41	1.02
5.55 -	5.64	14	19	2.86	3.88
5.65 -	5.74	11	30	2.24	6.12
5.75 -	5.84	29	59	5.92	12.04
5.85 -	5.94	15	74	3.06	15.10
5.95 -	6.04	56	130	11.43	26.53
6.05 -	6.14	47	177	9.59	36.12
6.15 -	6.24	56	233	11.43	47.55
6.25 -	6.34	39	272	7.96	55.51
6.35 -	6.44	42	314	8.57	64.08
6.45 -	6.54	43	357	8.78	72.86
6.55 -	6.64	36	393	7.35	80.20
6.65 -	6.74	20	413	4.08	84.29
6.75 -	6.84	18	431	3.67	87.96
6.85 -	6.94	17	448	3.47	91.43
6.95 -	7.04	10	458	2.04	93.47
7.05 -	7.14	7	465	1.43	94.90
7.15 -	7.24	9	474	1.84	96.73
7.25 -	7.34	5	479	1.02	97.76
7.35 -	7.44	6	485	1.22	98.98
7.45 -	7.54	3	488	.61	99.59
7.55 -	7.64	1	489	.20	99.80
7.65 -	7.74	0	489	.00	99.80
7.75 -	7.84	0	489	.00	99.80
7.85 -	7.94	1	490	.20	100.00

VARIABLE NO. 17--HEEL BREADTH,RIGHT

MALE DATA				FEMALE DATA		
*****				*****		

PERCENTILES				PERCENTILES		
CENTIMETERS		INCHES		CENTIMETERS		INCHES
6.09	1ST	2.40		5.51	1ST	2.17
6.17	2ND	2.43		5.60	2ND	2.20
6.23	3RD	2.45		5.65	3RD	2.23
6.31	5TH	2.48		5.72	5TH	2.25
6.45	10TH	2.54		5.83	10TH	2.30
6.56	15TH	2.58		5.91	15TH	2.33
6.64	20TH	2.61		5.97	20TH	2.35
6.71	25TH	2.64		6.03	25TH	2.37
6.78	30TH	2.67		6.08	30TH	2.39
6.84	35TH	2.69		6.13	35TH	2.41
6.90	40TH	2.72		6.18	40TH	2.43
6.95	45TH	2.74		6.23	45TH	2.45
7.01	50TH	2.76		6.29	50TH	2.47
7.06	55TH	2.78		6.34	55TH	2.50
7.12	60TH	2.80		6.40	60TH	2.52
7.17	65TH	2.82		6.46	65TH	2.54
7.23	70TH	2.85		6.52	70TH	2.57
7.30	75TH	2.87		6.60	75TH	2.60
7.38	80TH	2.90		6.68	80TH	2.63
7.47	85TH	2.94		6.78	85TH	2.67
7.59	90TH	2.99		6.92	90TH	2.72
7.78	95TH	3.06		7.12	95TH	2.80
7.92	97TH	3.12		7.25	97TH	2.85
8.04	98TH	3.16		7.35	98TH	2.89
8.24	99TH	3.24		7.49	99TH	2.95

*****				*****		

THE SUMMARY STATISTICS				THE SUMMARY STATISTICS		
CENTIMETERS		INCHES		CENTIMETERS		INCHES
7.02	MEAN	2.76		6.33	MEAN	2.49
.03	SE(M)	.01		.02	SE(M)	.01
.44	ST DEV	.17		.42	ST DEV	.17
.02	SE(SD)	.01		.01	SE(SD)	.01

*****			*****	
COEFF. OF VARIATION	6.3%		COEFF. OF VARIATION	6.7%
SYMMETRY----VETA I	.31		SYMMETRY----VETA I	.55
KURTOSIS----VETA II	.26		KURTOSIS----VETA II	.30

*****			*****	
NUMBER OF SUBJECTS	293		NUMBER OF SUBJECTS	490

102

18. BOF Breadth, Diagonal

Landmark: 1st and 5th metatarsal-phalangeal protrusions, medial aspects

Instrument: Sliding Caliper

Position of Subject: Subject stands erect, feet slightly apart, and weight distributed equally on both feet.

Procedure: With a sliding caliper, measure the breadth of the foot at the medial landmarks of the 1st and 5th metatarsal-phalangeal joints. The measurement is in a plane oblique to the long axis of the foot.

VARIABLE NO. 18--BOF BRDTH,DIAGONAL   MALE DATA

-- INTERVALS --		ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
9.15 -	9.24	3	3	1.02	1.02
9.25 -	9.34	2	5	.68	1.71
9.35 -	9.44	2	7	.68	2.39
9.45 -	9.54	2	9	.68	3.07
9.55 -	9.64	6	15	2.05	5.12
9.65 -	9.74	5	20	1.71	6.83
9.75 -	9.84	8	28	2.73	9.56
9.85 -	9.94	10	38	3.41	12.97
9.95 -	10.04	20	58	6.83	19.80
10.05 -	10.14	16	74	5.46	25.26
10.15 -	10.24	27	101	9.22	34.47
10.25 -	10.34	14	115	4.78	39.25
10.35 -	10.44	22	137	7.51	46.76
10.45 -	10.54	15	152	5.12	51.88
10.55 -	10.64	19	171	6.48	58.36
10.65 -	10.74	21	192	7.17	65.53
10.75 -	10.84	19	211	6.48	72.01
10.85 -	10.94	13	224	4.44	76.45
10.95 -	11.04	17	241	5.80	82.25
11.05 -	11.14	13	254	4.44	86.69
11.15 -	11.24	5	259	1.71	88.40
11.25 -	11.34	9	268	3.07	91.47
11.35 -	11.44	6	274	2.05	93.52
11.45 -	11.54	7	281	2.39	95.90
11.55 -	11.64	3	284	1.02	96.93
11.65 -	11.74	3	287	1.02	97.95
11.75 -	11.84	2	289	.68	98.63
11.85 -	11.94	2	291	.68	99.32
11.95 -	12.04	2	293	.68	100.00

VARIABLE NO. 18--BOF BRDTH,DIAGONAL   FEMALE DATA

-- INTERVALS --		ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
7.65 -	7.74	1	1	.20	.20
7.75 -	7.84	0	1	.00	.20
7.85 -	7.94	0	1	.00	.20
7.95 -	8.04	0	1	.00	.20
8.05 -	8.14	0	1	.00	.20
8.15 -	8.24	1	2	.20	.41
8.25 -	8.34	2	4	.41	.82
8.35 -	8.44	1	5	.20	1.02
8.45 -	8.54	6	11	1.23	2.25
8.55 -	8.64	4	15	.82	3.07
8.65 -	8.74	8	23	1.64	4.71
8.75 -	8.84	10	33	2.05	6.76
8.85 -	8.94	16	49	3.28	10.04
8.95 -	9.04	33	82	6.76	16.80
9.05 -	9.14	34	116	6.97	23.77
9.15 -	9.24	36	152	7.38	31.15
9.25 -	9.34	32	184	6.56	37.70
9.35 -	9.44	51	235	10.45	48.16
9.45 -	9.54	39	274	7.99	56.15
9.55 -	9.64	37	311	7.58	63.73
9.65 -	9.74	35	346	7.17	70.90
9.75 -	9.84	25	371	5.12	76.02
9.85 -	9.94	27	398	5.53	81.56
9.95 -	10.04	29	427	5.94	87.50
10.05 -	10.14	13	440	2.66	90.16
10.15 -	10.24	19	459	3.89	94.06
10.25 -	10.34	10	469	2.05	96.11
10.35 -	10.44	7	476	1.43	97.54
10.45 -	10.54	4	480	.82	98.36
10.55 -	10.64	2	482	.41	98.77
10.65 -	10.74	1	483	.20	98.98
10.75 -	10.84	2	485	.41	99.39
10.85 -	10.94	0	485	.00	99.39
10.95 -	11.04	2	487	.41	99.80
11.05 -	11.14	1	488	.20	100.00

VARIABLE NO. 18--BOF BRDTH,DIAGONAL

MALE DATA				FEMALE DATA		
* * * * *				* * * * *		

PERCENTILES				PERCENTILES		
CENTIMETERS		INCHES		CENTIMETERS		INCHES
9.24	1ST	3.64		8.43	1ST	3.32
9.42	2ND	3.71		8.56	2ND	3.37
9.52	3RD	3.75		8.64	3RD	3.40
9.65	5TH	3.80		8.75	5TH	3.44
9.84	10TH	3.87		8.91	10TH	3.51
9.96	15TH	3.92		9.02	15TH	3.55
10.06	20TH	3.96		9.11	20TH	3.59
10.15	25TH	3.99		9.18	25TH	3.61
10.22	30TH	4.02		9.25	30TH	3.64
10.30	35TH	4.05		9.31	35TH	3.67
10.37	40TH	4.08		9.37	40TH	3.69
10.44	45TH	4.11		9.43	45TH	3.71
10.51	50TH	4.14		9.49	50TH	3.74
10.58	55TH	4.16		9.55	55TH	3.76
10.65	60TH	4.19		9.61	60TH	3.78
10.73	65TH	4.22		9.67	65TH	3.81
10.82	70TH	4.26		9.74	70TH	3.83
10.91	75TH	4.29		9.81	75TH	3.86
11.01	80TH	4.34		9.89	80TH	3.89
11.14	85TH	4.38		9.99	85TH	3.93
11.29	90TH	4.45		10.12	90TH	3.98
11.52	95TH	4.54		10.31	95TH	4.06
11.66	97TH	4.59		10.45	97TH	4.11
11.76	98TH	4.63		10.55	98TH	4.15
11.90	99TH	4.68		10.71	99TH	4.22

* * * * *   * * * * *

THE SUMMARY STATISTICS				THE SUMMARY STATISTICS		
CENTIMETERS		INCHES		CENTIMETERS		INCHES
10.54	MEAN	4.15		9.50	MEAN	3.74
.03	SE(M)	.01		.02	SE(M)	.01
.56	ST DEV	.22		.48	ST DEV	.19
.02	SE(SD)	.01		.02	SE(SD)	.01

* * * * *   * * * * *

COEFF. OF VARIATION	5.3%		COEFF. OF VARIATION	5.1%
SYMMETRY----VETA I	.17		SYMMETRY----VETA I	.15
KURTOSIS----VETA II	-.23		KURTOSIS----VETA II	.36

* * * * *   * * * * *

NUMBER OF SUBJECTS	293		NUMBER OF SUBJECTS	488

106

19. Heel Breadth, Left

Landmark: None

Instrument: Sliding Caliper

Position of Subject: Subject stands erect, feet slightly apart, and weight distributed equally on both feet.

Procedure: With a sliding caliper held parallel to the long axis of the foot, measure the maximum horizontal breadth of the left heel. The measurement is perpendicular to the long axis of the foot.

[SEE HEEL BREADTH, RIGHT FOR PHOTOGRAPH]

VARIABLE NO. 19--HEEL BREADTH,LEFT   MALE DATA

-- INTERVALS --		ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
5.85 -	5.94	1	1	.34	.34
5.95 -	6.04	1	2	.34	.69
6.05 -	6.14	5	7	1.72	2.41
6.15 -	6.24	4	11	1.37	3.78
6.25 -	6.34	12	23	4.12	7.90
6.35 -	6.44	11	34	3.78	11.68
6.45 -	6.54	18	52	6.19	17.87
6.55 -	6.64	14	66	4.81	22.68
6.65 -	6.74	19	85	6.53	29.21
6.75 -	6.84	31	116	10.65	39.86
6.85 -	6.94	22	138	7.56	47.42
6.95 -	7.04	31	169	10.65	58.08
7.05 -	7.14	26	195	8.93	67.01
7.15 -	7.24	20	215	6.87	73.88
7.25 -	7.34	21	236	7.22	81.10
7.35 -	7.44	15	251	5.15	86.25
7.45 -	7.54	16	267	5.50	91.75
7.55 -	7.64	6	273	2.06	93.81
7.65 -	7.74	4	277	1.37	95.19
7.75 -	7.84	7	284	2.41	97.59
7.85 -	7.94	0	284	.00	97.59
7.95 -	8.04	2	286	.69	98.28
8.05 -	8.14	0	286	.00	98.28
8.15 -	8.24	3	289	1.03	99.31
8.25 -	8.34	2	291	.69	100.00

VARIABLE NO. 19--HEEL BREADTH,LEFT   FEMALE DATA

-- INTERVALS --		ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
5.25 -	5.34	4	4	.82	.82
5.35 -	5.44	1	5	.21	1.03
5.45 -	5.54	7	12	1.44	2.46
5.55 -	5.64	14	26	2.87	5.34
5.65 -	5.74	21	47	4.31	9.65
5.75 -	5.84	31	78	6.37	16.02
5.85 -	5.94	32	110	6.57	22.59
5.95 -	6.04	39	149	8.01	30.60
6.05 -	6.14	55	204	11.29	41.89
6.15 -	6.24	42	246	8.62	50.51
6.25 -	6.34	47	293	9.65	60.16
6.35 -	6.44	39	332	8.01	68.17
6.45 -	6.54	34	366	6.98	75.15
6.55 -	6.64	37	403	7.60	82.75
6.65 -	6.74	19	422	3.90	86.65
6.75 -	6.84	23	445	4.72	91.38
6.85 -	6.94	9	454	1.85	93.22
6.95 -	7.04	12	466	2.46	95.69
7.05 -	7.14	2	468	.41	96.10
7.15 -	7.24	11	479	2.26	98.36
7.25 -	7.34	3	482	.62	98.97
7.35 -	7.44	3	485	.62	99.59
7.45 -	7.54	0	485	.00	99.59
7.55 -	7.64	2	487	.41	100.00

VARIABLE NO. 19--HEEL BREADTH,LEFT

MALE DATA				FEMALE DATA		
* * * * *				* * * * *		

PERCENTILES				PERCENTILES		
CENTIMETERS		INCHES		CENTIMETERS		INCHES
6.07	1ST	2.39		5.43	1ST	2.14
6.13	2ND	2.41		5.52	2ND	2.17
6.18	3RD	2.43		5.57	3RD	2.19
6.27	5TH	2.47		5.64	5TH	2.22
6.41	10TH	2.52		5.76	10TH	2.27
6.52	15TH	2.57		5.84	15TH	2.30
6.60	20TH	2.60		5.91	20TH	2.33
6.68	25TH	2.63		5.97	25TH	2.35
6.74	30TH	2.66		6.03	30TH	2.37
6.81	35TH	2.68		6.08	35TH	2.39
6.86	40TH	2.70		6.14	40TH	2.42
6.92	45TH	2.72		6.19	45TH	2.44
6.97	50TH	2.74		6.24	50TH	2.46
7.02	55TH	2.77		6.29	55TH	2.48
7.08	60TH	2.79		6.35	60TH	2.50
7.13	65TH	2.81		6.41	65TH	2.52
7.19	70TH	2.83		6.47	70TH	2.55
7.25	75TH	2.86		6.54	75TH	2.58
7.33	80TH	2.88		6.62	80TH	2.61
7.41	85TH	2.92		6.72	85TH	2.65
7.53	90TH	2.96		6.84	90TH	2.69
7.72	95TH	3.04		7.03	95TH	2.77
7.87	97TH	3.10		7.15	97TH	2.81
7.99	98TH	3.15		7.23	98TH	2.85
8.21	99TH	3.23		7.37	99TH	2.90

* * * * *				* * * * *		

THE SUMMARY STATISTICS				THE SUMMARY STATISTICS		
CENTIMETERS		INCHES		CENTIMETERS		INCHES
6.98	MEAN	2.75		6.27	MEAN	2.47
.03	SE(M)	.01		.02	SE(M)	.01
.44	ST DEV	.17		.42	ST DEV	.17
.02	SE(SD)	.01		.01	SE(SD)	.01

* * * * *				* * * * *		

COEFF. OF VARIATION	6.3%			COEFF. OF VARIATION	6.7%
SYMMETRY----VETA I	.28			SYMMETRY----VETA I	.38
KURTOSIS----VETA II	.14			KURTOSIS----VETA II	.02

* * * * *				* * * * *	

NUMBER OF SUBJECTS	291			NUMBER OF SUBJECTS	487

20. BOF Circumference, Left

Landmark: 1st and 5th metatarsal-phalangeal protrusions

Instrument: Tape

Position of Subject: Subject stands erect, feet slightly apart, and weight distributed equally on both feet.

Procedure: With a tape, measure the maximum circumference of the left foot over the 1st and 5th metatarsal-phalangeal landmarks. The measurement is in a plane oblique to the long axis of the foot.

[SEE BOF CIRCUMFERENCE, RIGHT FOR PHOTOGRAPH]

111

VARIABLE NO. 20--BOF CIRCUMFER,LEFT   MALE DATA

-- INTERVALS --		ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
21.75 -	21.94	1	1	.34	.34
21.95 -	22.14	1	2	.34	.69
22.15 -	22.34	2	4	.69	1.38
22.35 -	22.54	3	7	1.03	2.41
22.55 -	22.74	2	9	.69	3.10
22.75 -	22.94	4	13	1.38	4.48
22.95 -	23.14	3	16	1.03	5.52
23.15 -	23.34	2	18	.69	6.21
23.35 -	23.54	7	25	2.41	8.62
23.55 -	23.74	10	35	3.45	12.07
23.75 -	23.94	17	52	5.86	17.93
23.95 -	24.14	19	71	6.55	24.48
24.15 -	24.34	22	93	7.59	32.07
24.35 -	24.54	21	114	7.24	39.31
24.55 -	24.74	19	133	6.55	45.86
24.75 -	24.94	7	140	2.41	48.28
24.95 -	25.14	18	158	6.21	54.48
25.15 -	25.34	14	172	4.83	59.31
25.35 -	25.54	17	189	5.86	65.17
25.55 -	25.74	9	198	3.10	68.28
25.75 -	25.94	12	210	4.14	72.41
25.95 -	26.14	16	226	5.52	77.93
26.15 -	26.34	13	239	4.48	82.41
26.35 -	26.54	10	249	3.45	85.86
26.55 -	26.74	7	256	2.41	88.28
26.75 -	26.94	6	262	2.07	90.34
26.95 -	27.14	5	267	1.72	92.07
27.15 -	27.34	6	273	2.07	94.14
27.35 -	27.54	5	278	1.72	95.86
27.55 -	27.74	3	281	1.03	96.90
27.75 -	27.94	4	285	1.38	98.28
27.95 -	28.14	1	286	.34	98.62
28.15 -	28.34	3	289	1.03	99.66
28.35 -	28.54	1	290	.34	100.00

VARIABLE NO. 20--BOF CIRCUMFER,LEFT   FEMALE DATA

-- INTERVALS --		-- FREQUENCIES --			
		ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
17.95 -	18.14	1	1	.20	.20
18.15 -	18.34	0	1	.00	.20
18.35 -	18.54	0	1	.00	.20
18.55 -	18.74	0	1	.00	.20
18.75 -	18.94	0	1	.00	.20
18.95 -	19.14	0	1	.00	.20
19.15 -	19.34	0	1	.00	.20
19.35 -	19.54	0	1	.00	.20
19.55 -	19.74	0	1	.00	.20
19.75 -	19.94	0	1	.00	.20
19.95 -	20.14	4	5	.82	1.02
20.15 -	20.34	2	7	.41	1.43
20.35 -	20.54	5	12	1.02	2.46
20.55 -	20.74	10	22	2.05	4.51
20.75 -	20.94	8	30	1.64	6.15
20.95 -	21.14	15	45	3.07	9.22
21.15 -	21.34	12	57	2.46	11.68
21.35 -	21.54	23	80	4.71	16.39
21.55 -	21.74	27	107	5.53	21.93
21.75 -	21.94	43	150	8.81	30.74
21.95 -	22.14	34	184	6.97	37.70
22.15 -	22.34	38	222	7.79	•45.49
22.35 -	22.54	34	256	6.97	52.46
22.55 -	22.74	37	293	7.58	60.04
22.75 -	22.94	28	321	5.74	65.78
22.95 -	23.14	36	357	7.38	73.16
23.15 -	23.34	23	380	4.71	77.87
23.35 -	23.54	21	401	4.30	82.17
23.55 -	23.74	19	420	3.89	86.07
23.75 -	23.94	19	439	3.89	89.96
23.95 -	24.14	18	457	3.69	93.65
24.15 -	24.34	7	464	1.43	95.08
24.35 -	24.54	5	469	1.02	96.11
24.55 -	24.74	5	474	1.02	97.13
24.75 -	24.94	6	480	1.23	98.36
24.95 -	25.14	3	483	.61	98.98
25.15 -	25.34	1	484	.20	99.18
25.35 -	25.54	1	485	.20	99.39
25.55 -	25.74	1	486	.20	99.59
25.75 -	25.94	0	486	.00	99.59
25.95 -	26.14	1	487	.20	99.80
26.15 -	26.34	0	487	.00	99.80
26.35 -	26.54	1	488	.20	100.00

VARIABLE NO. 20--BOF CIRCUMFER,LEFT

	MALE DATA				FEMALE DATA	

* * * * *   * * * * *

PERCENTILES				PERCENTILES		
CENTIMETERS		INCHES		CENTIMETERS		INCHES
22.16	1ST	8.72		20.14	1ST	7.93
22.57	2ND	8.89		20.44	2ND	8.05
22.80	3RD	8.98		20.62	3RD	8.12
23.08	5TH	9.09		20.86	5TH	8.21
23.49	10TH	9.25		21.21	10TH	8.35
23.75	15TH	9.35		21.45	15TH	8.44
23.97	20TH	9.44		21.64	20TH	8.52
24.16	25TH	9.51		21.80	25TH	8.58
24.33	30TH	9.58		21.95	30TH	8.64
24.50	35TH	9.65		22.09	35TH	8.70
24.66	40TH	9.71		22.22	40TH	8.75
24.83	45TH	9.77		22.35	45TH	8.80
25.00	50TH	9.84		22.49	50TH	8.85
25.17	55TH	9.91		22.62	55TH	8.91
25.35	60TH	9.98		22.76	60TH	8.96
25.54	65TH	10.06		22.91	65TH	9.02
25.75	70TH	10.14		23.06	70TH	9.08
25.98	75TH	10.23		23.24	75TH	9.15
26.24	80TH	10.33		23.43	80TH	9.23
26.54	85TH	10.45		23.66	85TH	9.32
26.92	90TH	10.60		23.96	90TH	9.43
27.45	95TH	10.81		24.40	95TH	9.61
27.76	97TH	10.93		24.68	97TH	9.72
27.95	98TH	11.01		24.88	98TH	9.80
28.20	99TH	11.10		25.19	99TH	9.92

* * * * *   * * * * *

THE SUMMARY STATISTICS				THE SUMMARY STATISTICS		
CENTIMETERS		INCHES		CENTIMETERS		INCHES
25.10	MEAN	9.88		22.54	MEAN	8.87
.08	SE(M)	.03		.05	SE(M)	.02
1.30	ST DEV	.51		1.08	ST DEV	.43
.05	SE(SD)	.02		.03	SE(SD)	.01

* * * * *   * * * * *

COEFF. OF VARIATION	5.2%		COEFF. OF VARIATION	4.8%
SYMMETRY----VETA I	.24		SYMMETRY----VETA I	.17
KURTOSIS----VETA II	-.31		KURTOSIS----VETA II	.62

* * * * *   * * * * *

NUMBER OF SUBJECTS	290		NUMBER OF SUBJECTS	488

21. Weight

Landmark: None

Instrument: Scales

Position of Subject: Subject removes the contents of his/her pockets and stands on center of scale platform.

Procedure: Read scales to 0.1 kg.

[NO PHOTOGRAPH]

VARIABLE NO. 21--WEIGHT   MALE DATA

-- INTERVALS --   -- FREQUENCIES --

	ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
50.75 - 52.24	1	1	.34	.34
52.25 - 53.74	1	2	.34	.68
53.75 - 55.24	1	3	.34	1.03
55.25 - 56.74	3	6	1.03	2.05
56.75 - 58.24	3	9	1.03	3.08
58.25 - 59.74	5	14	1.71	4.79
59.75 - 61.24	9	23	3.08	7.88
61.25 - 62.74	12	35	4.11	11.99
62.75 - 64.24	18	53	6.16	18.15
64.25 - 65.74	19	72	6.51	24.66
65.75 - 67.24	9	81	3.08	27.74
67.25 - 68.74	17	98	5.82	33.56
68.75 - 70.24	8	106	2.74	36.30
70.25 - 71.74	18	124	6.16	42.47
71.75 - 73.24	12	136	4.11	46.58
73.25 - 74.74	11	147	3.77	50.34
74.75 - 76.24	9	156	3.08	53.42
76.25 - 77.74	16	172	5.48	58.90
77.75 - 79.24	10	182	3.42	62.33
79.25 - 80.74	8	190	2.74	65.07
80.75 - 82.24	15	205	5.14	70.21
82.25 - 83.74	12	217	4.11	74.32
83.75 - 85.24	13	230	4.45	78.77
85.25 - 86.74	6	236	2.05	80.82
86.75 - 88.24	11	247	3.77	84.59
88.25 - 89.74	7	254	2.40	86.99
89.75 - 91.24	11	265	3.77	90.75
91.25 - 92.74	5	270	1.71	92.47
92.75 - 94.24	4	274	1.37	93.84
94.25 - 95.74	2	276	.68	94.52
95.75 - 97.24	5	281	1.71	96.23
97.25 - 98.74	3	284	1.03	97.26
98.75 - 100.24	0	284	.00	97.26
100.25 - 101.74	3	287	1.03	98.29
101.75 - 103.24	0	287	.00	98.29
103.25 - 104.74	2	289	.68	98.97
104.75 - 106.24	1	290	.34	99.32
106.25 - 107.74	0	290	.00	99.32
107.75 - 109.24	1	291	.34	99.66
109.25 - 110.74	1	292	.34	100.00

VARIABLE NO. 21--WEIGHT   FEMALE DATA

-- INTERVALS --

-- INTERVALS --		ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
42.75 -	43.74	1	1	.20	.20
43.75 -	44.74	0	1	.00	.20
44.75 -	45.74	2	3	.41	.61
45.75 -	46.74	3	6	.61	1.22
46.75 -	47.74	5	11	1.02	2.24
47.75 -	48.74	5	16	1.02	3.27
48.75 -	49.74	9	25	1.84	5.10
49.75 -	50.74	13	38	2.65	7.76
50.75 -	51.74	13	51	2.65	10.41
51.75 -	52.74	13	64	2.65	13.06
52.75 -	53.74	17	81	3.47	16.53
53.75 -	54.74	17	98	3.47	20.00
54.75 -	55.74	27	125	5.51	25.51
55.75 -	56.74	15	140	3.06	28.57
56.75 -	57.74	34	174	6.94	35.51
57.75 -	58.74	32	206	6.53	42.04
58.75 -	59.74	37	243	7.55	49.59
59.75 -	60.74	29	272	5.92	55.51
60.75 -	61.74	29	301	5.92	61.43
61.75 -	62.74	26	327	5.31	66.73
62.75 -	63.74	29	356	5.92	72.65
63.75 -	64.74	20	376	4.08	76.73
64.75 -	65.74	16	392	3.27	80.00
65.75 -	66.74	20	412	4.08	84.08
66.75 -	67.74	15	427	3.06	87.14
67.75 -	68.74	12	439	2.45	89.59
68.75 -	69.74	10	449	2.04	91.63
69.75 -	70.74	10	459	2.04	93.67
70.75 -	71.74	5	464	1.02	94.69
71.75 -	72.74	6	470	1.22	95.92
72.75 -	73.74	7	477	1.43	97.35
73.75 -	74.74	2	479	.41	97.76
74.75 -	75.74	3	482	.61	98.37
75.75 -	76.74	2	484	.41	98.78
76.75 -	77.74	3	487	.61	99.39
77.75 -	78.74	1	488	.20	99.59
78.75 -	79.74	0	488	.00	99.59
79.75 -	80.74	0	488	.00	99.59
80.75 -	81.74	1	489	.20	99.80
81.75 -	82.74	0	489	.00	99.80
82.75 -	83.74	0	489	.00	99.80
83.75 -	84.74	0	489	.00	99.80
84.75 -	85.74	0	489	.00	99.80
85.75 -	86.74	0	489	.00	99.80
86.75 -	87.74	0	489	.00	99.80
87.75 -	88.74	1	490	.20	100.00

VARIABLE NO. 21--WEIGHT

MALE DATA				FEMALE DATA		

* * * * *   * * * * *

PERCENTILES				PERCENTILES		
KILOGRAMS		POUNDS		KILOGRAMS		POUNDS
55.77	1ST	122.95		46.23	1ST	101.92
56.75	2ND	125.11		47.60	2ND	104.94
57.55	3RD	126.88		48.52	3RD	106.96
58.87	5TH	129.78		49.81	5TH	109.81
61.41	10TH	135.38		51.90	10TH	114.43
63.45	15TH	139.89		53.37	15TH	117.67
65.25	20TH	143.86		54.56	20TH	120.29
66.93	25TH	147.56		55.61	25TH	122.59
68.52	30TH	151.06		56.55	30TH	124.68
70.06	35TH	154.46		57.44	35TH	126.63
71.58	40TH	157.81		58.29	40TH	128.51
73.10	45TH	161.16		59.12	45TH	130.33
74.65	50TH	164.58		59.95	50TH	132.16
76.24	55TH	168.08		60.78	55TH	134.01
77.88	60TH	171.70		61.64	60TH	135.89
79.61	65TH	175.51		62.53	65TH	137.86
81.46	70TH	179.59		63.48	70TH	139.96
83.49	75TH	184.06		64.53	75TH	142.26
85.77	80TH	189.10		65.71	80TH	144.87
88.42	85TH	194.93		67.10	85TH	147.94
91.74	90TH	202.25		68.91	90TH	151.92
96.47	95TH	212.69		71.68	95TH	158.03
99.35	97TH	219.04		73.56	97TH	162.17
101.34	98TH	223.41		74.98	98TH	165.31
104.16	99TH	229.62		77.31	99TH	170.44

* * * * *   * * * * *

THE SUMMARY STATISTICS				THE SUMMARY STATISTICS		
KILOGRAMS		POUNDS		KILOGRAMS		POUNDS
75.72	MEAN	166.93		60.27	MEAN	132.87
.67	SE(M)	1.48		.30	SE(M)	.66
11.47	ST DEV	25.29		6.66	ST DEV	14.69
.47	SE(SD)	1.05		.21	SE(SD)	.47

* * * * *   * * * * *

COEFF. OF VARIATION	15.1%		COEFF. OF VARIATION	11.1%
SYMMETRY----VETA I	.40		SYMMETRY----VETA I	.34
KURTOSIS----VETA II	-.42		KURTOSIS----VETA II	.41

* * * * *   * * * * *

NUMBER OF SUBJECTS	292		NUMBER OF SUBJECTS	490

22. Ankle Length

Landmark: Dorsal junction of the foot and leg.

Instrument: Footboard, plain block, and adjustable block

Position of Subject: Subject stands erect, right foot in the right measuring box, left foot in the left measuring box, and weight distributed equally on both feet. The right foot is positioned so that its medial side is parallel to the side of the box, the heel touches the rear of the box, and the 5th metatarsal-phalangeal joint touches the side of the box.

Procedure: Using an adjustable block placed outside the lateral wall of the foot box with its arm over the dorsal junction landmark, align a plain block at the foot-leg landmark and measure on the scale of the box the length from the heel to the anterior limit of the ankle.
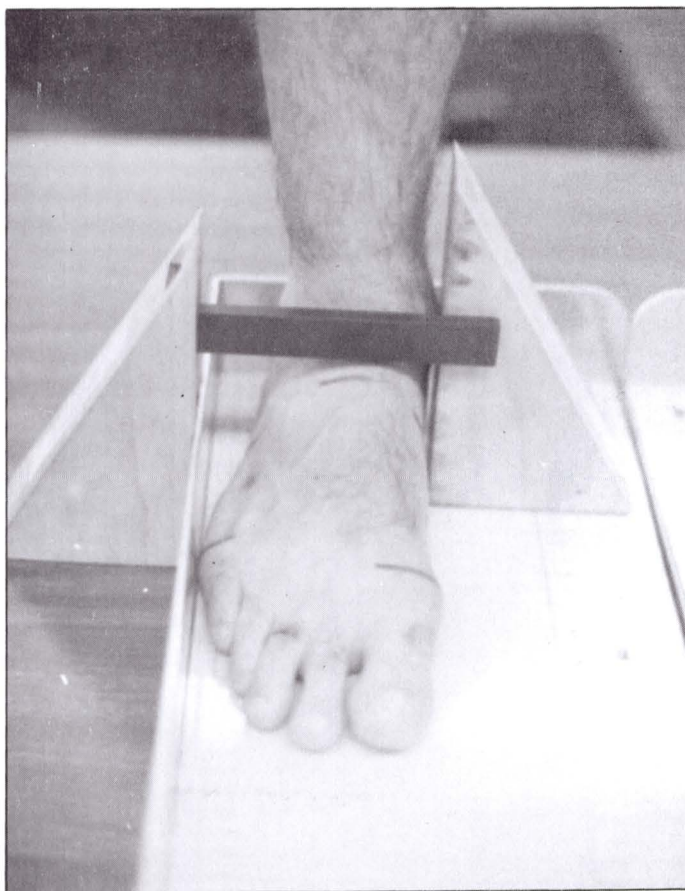
VARIABLE NO. 22--ANKLE LENGTH   MALE DATA

-- INTERVALS --		ACTUAL FREQ.	CUM.-FREQ.	PCT.-FREQ.	CUM.-PCT.-FQ.
8.95 -	9.04	1	1	.34	.34
9.05 -	9.14	0	1	.00	.34
9.15 -	9.24	0	1	.00	.34
9.25 -	9.34	1	2	.34	.68
9.35 -	9.44	2	4	.68	1.37
9.45 -	9.54	5	9	1.71	3.07
9.55 -	9.64	3	12	1.02	4.10
9.65 -	9.74	4	16	1.37	5.46
9.75 -	9.84	2	18	.68	6.14
9.85 -	9.94	4	22	1.37	7.51
9.95 -	10.04	23	45	7.85	15.36
10.05 -	10.14	9	54	3.07	18.43
10.15 -	10.24	9	63	3.07	21.50
10.25 -	10.34	14	77	4.78	26.28
10.35 -	10.44	15	92	5.12	31.40
10.45 -	10.54	19	111	6.48	37.88
10.55 -	10.64	12	123	4.10	41.98
10.65 -	10.74	16	139	5.46	47.44
10.75 -	10.84	12	151	4.10	51.54
10.85 -	10.94	12	163	4.10	55.63
10.95 -	11.04	31	194	10.58	66.21
11.05 -	11.14	10	204	3.41	69.62
11.15 -	11.24	5	209	1.71	71.33
11.25 -	11.34	15	224	5.12	76.45
11.35 -	11.44	4	228	1.37	77.82
11.45 -	11.54	12	240	4.10	81.91
11.55 -	11.64	4	244	1.37	83.28
11.65 -	11.74	8	252	2.73	86.01
11.75 -	11.84	11	263	3.75	89.76
11.85 -	11.94	6	269	2.05	91.81
11.95 -	12.04	12	281	4.10	95.90
12.05 -	12.14	2	283	.68	96.59
12.15 -	12.24	1	284	.34	96.93
12.25 -	12.34	3	287	1.02	97.95
12.35 -	12.44	3	290	1.02	98.98
12.45 -	12.54	1	291	.34	99.32
12.55 -	12.64	1	292	.34	99.66
12.65 -	12.74	1	293	.34	100.00

VARIABLE NO. 22--ANKLE LENGTH   FEMALE DATA

-- INTERVALS --   -- FREQUENCIES --

		ACTUAL FREQ.	CUM.-FREQ.	PCT.-FREQ.	CUM.-PCT.-FQ.
7.75 -	7.84	1	1	.20	.20
7.85 -	7.94	1	2	.20	.41
7.95 -	8.04	1	3	.20	.61
8.05 -	8.14	0	3	.00	.61
8.15 -	8.24	2	5	.41	1.02
8.25 -	8.34	0	5	.00	1.02
8.35 -	8.44	3	8	.61	1.63
8.45 -	8.54	17	25	3.47	5.10
8.55 -	8.64	2	27	.41	5.51
8.65 -	8.74	5	32	1.02	6.53
8.75 -	8.84	7	39	1.43	7.96
8.85 -	8.94	5	44	1.02	8.98
8.95 -	9.04	44	88	8.98	17.96
9.05 -	9.14	12	100	2.45	20.41
9.15 -	9.24	26	126	5.31	25.71
9.25 -	9.34	28	154	5.71	31.43
9.35 -	9.44	28	182	5.71	37.14
9.45 -	9.54	58	240	11.84	48.98
9.55 -	9.64	22	262	4.49	53.47
9.65 -	9.74	18	280	3.67	57.14
9.75 -	9.84	25	305	5.10	62.24
9.85 -	9.94	19	324	3.88	66.12
9.95 -	10.04	62	386	12.65	78.78
10.05 -	10.14	15	401	3.06	81.84
10.15 -	10.24	10	411	2.04	83.88
10.25 -	10.34	6	417	1.22	85.10
10.35 -	10.44	14	431	2.86	87.96
10.45 -	10.54	19	450	3.88	91.84
10.55 -	10.64	7	457	1.43	93.27
10.65 -	10.74	10	467	2.04	95.31
10.75 -	10.84	6	473	1.22	96.53
10.85 -	10.94	2	475	.41	96.94
10.95 -	11.04	10	485	2.04	98.98
11.05 -	11.14	0	485	.00	98.98
11.15 -	11.24	0	485	.00	98.98
11.25 -	11.34	3	488	.61	99.59
11.35 -	11.44	1	489	.20	99.80
11.45 -	11.54	0	489	.00	99.80
11.55 -	11.64	1	490	.20	100.00

VARIABLE NO. 22--ANKLE LENGTH

MALE DATA				FEMALE DATA		
* * * * *				* * * * *		

PERCENTILES				PERCENTILES		
CENTIMETERS		INCHES		CENTIMETERS		INCHES
9.37	1ST	3.69		8.24	1ST	3.24
9.51	2ND	3.74		8.41	2ND	3.31
9.59	3RD	3.78		8.52	3RD	3.35
9.72	5TH	3.83		8.66	5TH	3.41
9.92	10TH	3.91		8.87	10TH	3.49
10.07	15TH	3.97		9.01	15TH	3.55
10.20	20TH	4.01		9.13	20TH	3.59
10.31	25TH	4.06		9.22	25TH	3.63
10.41	30TH	4.10		9.31	30TH	3.67
10.51	35TH	4.14		9.39	35TH	3.70
10.61	40TH	4.18		9.47	40TH	3.73
10.70	45TH	4.21		9.55	45TH	3.76
10.80	50TH	4.25		9.63	50TH	3.79
10.90	55TH	4.29		9.71	55TH	3.82
11.00	60TH	4.33		9.79	60TH	3.85
11.11	65TH	4.37		9.87	65TH	3.89
11.22	70TH	4.42		9.96	70TH	3.92
11.34	75TH	4.47		10.06	75TH	3.96
11.48	80TH	4.52		10.17	80TH	4.00
11.64	85TH	4.58		10.30	85TH	4.06
11.83	90TH	4.66		10.47	90TH	4.12
12.09	95TH	4.76		10.74	95TH	4.23
12.24	97TH	4.82		10.91	97TH	4.30
12.34	98TH	4.86		11.04	98TH	4.35
12.46	99TH	4.91		11.25	99TH	4.43

* * * * *   * * * * *

THE SUMMARY STATISTICS				THE SUMMARY STATISTICS		
CENTIMETERS		INCHES		CENTIMETERS		INCHES
10.84	MEAN	4.27		9.65	MEAN	3.80
.04	SE(M)	.02		.03	SE(M)	.01
.72	ST DEV	.28		.62	ST DEV	.25
.03	SE(SD)	.01		.02	SE(SD)	.01

* * * * *   * * * * *

COEFF. OF VARIATION	6.6%		COEFF. OF VARIATION	6.5%
SYMMETRY----VETA I	.20		SYMMETRY----VETA I	.17
KURTOSIS----VETA II	-.47		KURTOSIS----VETA II	.07

* * .. * *   * * * * *

NUMBER OF SUBJECTS	293		NUMBER OF SUBJECTS	490

23. Instep Length

Landmark: Minimum instep circumference plane.

Instrument: Footboard and plain block

Position of Subject: Subject stands erect, right foot in the right measuring box, left foot in the left measuring box, and weight distributed equally on both feet. The right foot is positioned so that its medial side is parallel to the side of the box, the heel touches the rear of the box, and the 5th metatarsal-phalangeal joint touches the side of the box.

Procedure: Align a plain block at the instep circumference landmark and measure on the scale of the box the length from the heel to the anterior limit of the instep.
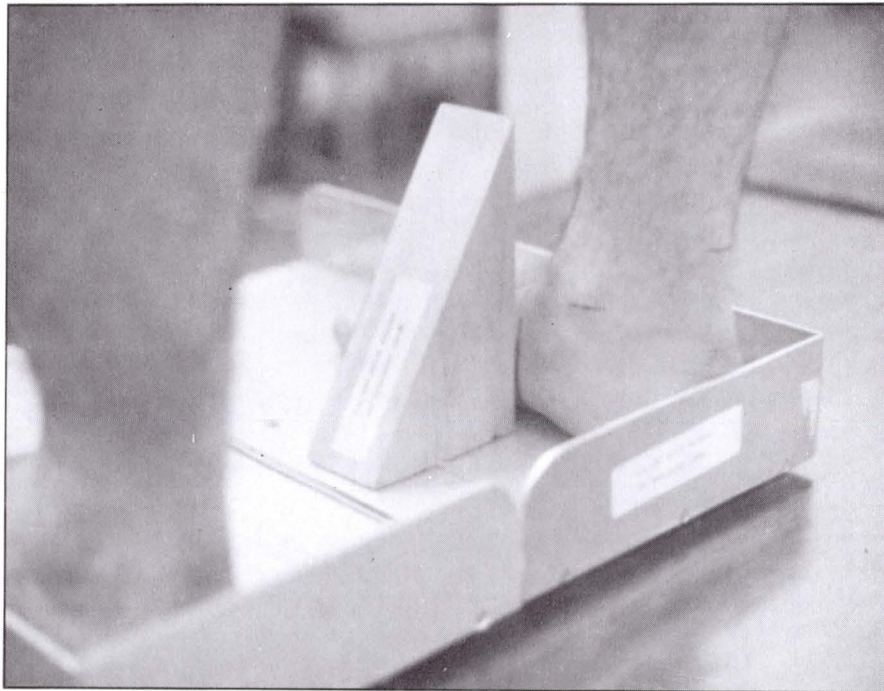
VARIABLE NO. 23--INSTEP LENGTH   MALE DATA

-- INTERVALS --		ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
9.55 -	9.64	1	1	.34	.34
9.65 -	9.74	2	3	.68	1.03
9.75 -	9.84	0	3	.00	1.03
9.85 -	9.94	1	4	.34	1.37
9.95 -	10.04	7	11	2.40	3.77
10.05 -	10.14	3	14	1.03	4.79
10.15 -	10.24	5	19	1.71	6.51
10.25 -	10.34	7	26	2.40	8.90
10.35 -	10.44	10	36	3.42	12.33
10.45 -	10.54	8	44	2.74	15.07
10.55 -	10.64	9	53	3.08	18.15
10.65 -	10.74	8	61	2.74	20.89
10.75 -	10.84	11	72	3.77	24.66
10.85 -	10.94	13	85	4.45	29.11
10.95 -	11.04	25	110	8.56	37.67
11.05 -	11.14	12	122	4.11	41.78
11.15 -	11.24	12	134	4.11	45.89
11.25 -	11.34	17	151	5.82	51.71
11.35 -	11.44	10	161	3.42	55.14
11.45 -	11.54	26	187	8.90	64.04
11.55 -	11.64	11	198	3.77	67.81
11.65 -	11.74	8	206	2.74	70.55
11.75 -	11.84	14	220	4.79	75.34
11.85 -	11.94	11	231	3.77	79.11
11.95 -	12.04	15	246	5.14	84.25
12.05 -	12.14	1	247	.34	84.59
12.15 -	12.24	4	251	1.37	85.96
12.25 -	12.34	3	254	1.03	86.99
12.35 -	12.44	7	261	2.40	89.38
12.45 -	12.54	6	267	2.05	91.44
12.55 -	12.64	4	271	1.37	92.81
12.65 -	12.74	3	274	1.03	93.84
12.75 -	12.84	5	279	1.71	95.55
12.85 -	12.94	2	281	.68	96.23
12.95 -	13.04	5	286	1.71	97.95
13.05 -	13.14	2	288	.68	98.63
13.15 -	13.24	1	289	.34	98.97
13.25 -	13.34	0	289	.00	98.97
13.35 -	13.44	0	289	.00	98.97
13.45 -	13.54	1	290	.34	99.32
13.55 -	13.64	0	290	.00	99.32
13.65 -	13.74	1	291	.34	99.66
13.75 -	13.84	1	292	.34	100.00

VARIABLE NO. 23--INSTEP LENGTH   FEMALE DATA

-- INTERVALS --		ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
8.25 -	8.34	1	1	.20	.20
8.35 -	8.44	1	2	.20	.41
8.45 -	8.54	1	3	.20	.61
8.55 -	8.64	1	4	.20	.82
8.65 -	8.74	0	4	.00	.82
8.75 -	8.84	3	7	.61	1.43
8.85 -	8.94	4	11	.82	2.24
8.95 -	9.04	8	19	1.63	3.88
9.05 -	9.14	8	27	1.63	5.51
9.15 -	9.24	9	36	1.84	7.35
9.25 -	9.34	8	44	1.63	8.98
9.35 -	9.44	12	56	2.45	11.43
9.45 -	9.54	28	84	5.71	17.14
9.55 -	9.64	24	108	4.90	22.04
9.65 -	9.74	19	127	3.88	25.92
9.75 -	9.84	32	159	6.53	32.45
9.85 -	9.94	18	177	3.67	36.12
9.95 -	10.04	48	225	9.80	45.92
10.05 -	10.14	29	254	5.92	51.84
10.15 -	10.24	12	266	2.45	54.29
10.25 -	10.34	24	290	4.90	59.18
10.35 -	10.44	22	312	4.49	63.67
10.45 -	10.54	33	345	6.73	70.41
10.55 -	10.64	16	361	3.27	73.67
10.65 -	10.74	14	375	2.86	76.53
10.75 -	10.84	18	393	3.67	80.20
10.85 -	10.94	11	404	2.24	82.45
10.95 -	11.04	23	427	4.69	87.14
11.05 -	11.14	13	440	2.65	89.80
11.15 -	11.24	6	446	1.22	91.02
11.25 -	11.34	6	452	1.22	92.24
11.35 -	11.44	4	456	.82	93.06
11.45 -	11.54	13	469	2.65	95.71
11.55 -	11.64	3	472	.61	96.33
11.65 -	11.74	3	475	.61	96.94
11.75 -	11.84	5	480	1.02	97.96
11.85 -	11.94	1	481	.20	98.16
11.95 -	12.04	4	485	.82	98.98
12.05 -	12.14	1	486	.20	99.18
12.15 -	12.24	3	489	.61	99.80
12.25 -	12.34	1	490	.20	100.00

VARIABLE NO. 23--INSTEP LENGTH

MALE DATA				FEMALE DATA		
* * * * *				* * * * *		

PERCENTILES				PERCENTILES		
CENTIMETERS		INCHES		CENTIMETERS		INCHES
9.76	1ST	3.84		8.76	1ST	3.45
9.93	2ND	3.91		8.92	2ND	3.51
10.04	3RD	3.95		9.02	3RD	3.55
10.18	5TH	4.01		9.15	5TH	3.60
10.41	10TH	4.10		9.36	10TH	3.68
10.57	15TH	4.16		9.50	15TH	3.74
10.70	20TH	4.21		9.61	20TH	3.78
10.82	25TH	4.26		9.71	25TH	3.82
10.92	30TH	4.30		9.81	30TH	3.86
11.02	35TH	4.34		9.90	35TH	3.90
11.12	40TH	4.38		9.99	40TH	3.93
11.22	45TH	4.42		10.07	45TH	3.97
11.31	50TH	4.45		10.16	50TH	4.00
11.41	55TH	4.49		10.26	55TH	4.04
11.51	60TH	4.53		10.35	60TH	4.08
11.62	65TH	4.58		10.46	65TH	4.12
11.74	70TH	4.62		10.57	70TH	4.16
11.87	75TH	4.67		10.69	75TH	4.21
12.01	80TH	4.73		10.83	80TH	4.26
12.19	85TH	4.80		10.99	85TH	4.33
12.41	90TH	4.89		11.21	90TH	4.41
12.76	95TH	5.02		11.52	95TH	4.54
12.99	97TH	5.11		11.72	97TH	4.62
13.16	98TH	5.18		11.87	98TH	4.67
13.42	99TH	5.29		12.08	99TH	4.75

* * * * *				* * * * *		

THE SUMMARY STATISTICS				THE SUMMARY STATISTICS		
CENTIMETERS		INCHES		CENTIMETERS		INCHES
11.37	MEAN	4.48		10.23	MEAN	4.03
.05	SE(M)	.02		.03	SE(M)	.01
.78	ST DEV	.31		.72	ST DEV	.28
.03	SE(SD)	.01		.02	SE(SD)	.01

* * * * *		* * * * *	

COEFF. OF VARIATION	6.9%		COEFF. OF VARIATION	7.0%
SYMMETRY----VETA I	.39		SYMMETRY----VETA I	.35
KURTOSIS----VETA II	.00		KURTOSIS----VETA II	-.07

* * * * *		* * * * *	

NUMBER OF SUBJECTS	292		NUMBER OF SUBJECTS	490

24. BOF Length, Right

Landmark: 1st metatarsal-phalangeal protrusion, medial aspect

Instrument: Footboard and plain block

Position of Subject: Subject stands erect, right foot in the right measuring box, left foot in the left measuring box, and weight distributed equally on both feet. The right foot is positioned so that its medial side is parallel to the side of the box, the heel touches the rear of the box, and the 5th metatarsal-phalangeal joint touches the side of the box.

Procedure: With a plain block touching the widest part of the right foot at the medial landmark of the 1st metatarsal-phalangeal joint, measure on the scale of the box the length from the heel to the ball of the foot.

VARIABLE NO. 24--BOF LENGTH,RIGHT   MALE DATA

-- INTERVALS --		ACTUAL FREQ.	-- FREQUENCIES -- CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
16.95 -	17.14	1	1	.34	.34
17.15 -	17.34	0	1	.00	.34
17.35 -	17.54	5	6	1.72	2.06
17.55 -	17.74	4	10	1.37	3.44
17.75 -	17.94	5	15	1.72	5.15
17.95 -	18.14	10	25	3.44	8.59
18.15 -	18.34	12	37	4.12	12.71
18.35 -	18.54	8	45	2.75	15.46
18.55 -	18.74	13	58	4.47	19.93
18.75 -	18.94	16	74	5.50	25.43
18.95 -	19.14	17	91	5.84	31.27
19.15 -	19.34	18	109	6.19	37.46
19.35 -	19.54	26	135	8.93	46.39
19.55 -	19.74	24	159	8.25	54.64
19.75 -	19.94	16	175	5.50	60.14
19.95 -	20.14	24	199	8.25	68.38
20.15 -	20.34	18	217	6.19	74.57
20.35 -	20.54	17	234	5.84	80.41
20.55 -	20.74	9	243	3.09	83.51
20.75 -	20.94	12	255	4.12	87.63
20.95 -	21.14	11	266	3.78	91.41
21.15 -	21.34	5	271	1.72	93.13
21.35 -	21.54	6	277	2.06	95.19
21.55 -	21.74	3	280	1.03	96.22
21.75 -	21.94	4	284	1.37	97.59
21.95 -	22.14	2	286	.69	98.28
22.15 -	22.34	4	290	1.37	99.66
22.35 -	22.54	1	291	.34	100.00

VARIABLE NO. 24--BOF LENGTH,RIGHT   FEMALE DATA

-- INTERVALS --		-- FREQUENCIES --			
		ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
11.95 -	12.14	1	1	.20	.20
12.15 -	12.34	0	1	.00	.20
12.35 -	12.54	0	1	.00	.20
12.55 -	12.74	0	1	.00	.20
12.75 -	12.94	0	1	.00	.20
12.95 -	13.14	0	1	.00	.20
13.15 -	13.34	0	1	.00	.20
13.35 -	13.54	0	1	.00	.20
13.55 -	13.74	0	1	.00	.20
13.75 -	13.94	0	1	.00	.20
13.95 -	14.14	1	2	.20	.41
14.15 -	14.34	0	2	.00	.41
14.35 -	14.54	0	2	.00	.41
14.55 -	14.74	1	3	.20	.61
14.75 -	14.94	0	3	.00	.61
14.95 -	15.14	1	4	.20	.82
15.15 -	15.34	1	5	.20	1.02
15.35 -	15.54	4	9	.82	1.84
15.55 -	15.74	5	14	1.02	2.86
15.75 -	15.94	5	19	1.02	3.88
15.95 -	16.14	13	32	2.65	6.53
16.15 -	16.34	18	50	3.67	10.20
16.35 -	16.54	15	65	3.06	13.27
16.55 -	16.74	16	81	3.27	16.53
16.75 -	16.94	18	99	3.67	20.20
16.95 -	17.14	40	139	8.16	28.37
17.15 -	17.34	45	184	9.18	37.55
17.35 -	17.54	33	217	6.73	44.29
17.55 -	17.74	33	250	6.73	51.02
17.75 -	17.94	27	277	5.51	56.53
17.95 -	18.14	41	318	8.37	64.90
18.15 -	18.34	33	351	6.73	71.63
18.35 -	18.54	30	381	6.12	77.76
18.55 -	18.74	18	399	3.67	81.43
18.75 -	18.94	19	418	3.88	85.31
18.95 -	19.14	19	437	3.88	89.18
19.15 -	19.34	14	451	2.86	92.04
19.35 -	19.54	14	465	2.86	94.90
19.55 -	19.74	7	472	1.43	96.33
19.75 -	19.94	9	481	1.84	98.16
19.95 -	20.14	2	483	.41	98.57
20.15 -	20.34	5	488	1.02	99.59
20.35 -	20.54	2	490	.41	100.00

VARIABLE NO. 24--BOF LENGTH,RIGHT

MALE DATA			FEMALE DATA		
* * * * *			* * * * *		

PERCENTILES			PERCENTILES		
CENTIMETERS		INCHES	CENTIMETERS		INCHES
17.38	1ST	6.84	15.31	1ST	6.03
17.58	2ND	6.92	15.61	2ND	6.14
17.72	3RD	6.98	15.79	3RD	6.22
17.93	5TH	7.06	16.03	5TH	6.31
18.28	10TH	7.19	16.40	10TH	6.46
18.52	15TH	7.29	16.65	15TH	6.55
18.73	20TH	7.37	16.85	20TH	6.63
18.91	25TH	7.44	17.02	25TH	6.70
19.07	30TH	7.51	17.18	30TH	6.76
19.22	35TH	7.57	17.32	35TH	6.82
19.37	40TH	7.62	17.46	40TH	6.88
19.51	45TH	7.68	17.60	45TH	6.93
19.65	50TH	7.74	17.74	50TH	6.98
19.79	55TH	7.79	17.88	55TH	7.04
19.93	60TH	7.85	18.02	60TH	7.09
20.08	65TH	7.91	18.16	65TH	7.15
20.24	70TH	7.97	18.32	70TH	7.21
20.40	75TH	8.03	18.49	75TH	7.28
20.59	80TH	8.11	18.68	80TH	7.35
20.81	85TH	8.19	18.90	85TH	7.44
21.09	90TH	8.31	19.17	90TH	7.55
21.51	95TH	8.47	19.57	95TH	7.70
21.79	97TH	8.58	19.81	97TH	7.80
22.00	98TH	8.66	19.98	98TH	7.86
22.34	99TH	8.79	20.22	99TH	7.96

* * * * *			* * * * *		

THE SUMMARY STATISTICS			THE SUMMARY STATISTICS		
CENTIMETERS		INCHES	CENTIMETERS		INCHES
19.67	MEAN	7.74	17.75	MEAN	6.99
.06	SE(M)	.02	.05	SE(M)	.02
1.07	ST DEV	.42	1.10	ST DEV	.43
.04	SE(SD)	.02	.04	SE(SD)	.01

* * * * *			* * * * *		

COEFF. OF VARIATION	5.5%	COEFF. OF VARIATION	6.2%
SYMMETRY----VETA I	.16	SYMMETRY----VETA I	-.26
KURTOSIS----VETA II	-.27	KURTOSIS----VETA II	1.13

* * * * *		* * * * *	

NUMBER OF SUBJECTS	291	NUMBER OF SUBJECTS	490

25. Foot Length, Right

Landmark: None

Instrument: Footboard and plain block

Position of Subject: Subject stands erect, right foot in the right measuring box, left foot in the left measuring box, and weight distributed equally on both feet. The right foot is positioned so that its medial side is parallel to the side of the box, the heel touches the rear of the box, and the 5th metatarsal-phalangeal joint touches the side of the box.

Procedure: With a plain block touching the anterior tip of the most protruding toe, measure on the scale of the box the length of the right foot. Record the most protruding toe.

VARIABLE NO. 25--FOOT LENGTH,RIGHT   MALE DATA

-- INTERVALS --

		ACTUAL FREQ.	CUM.-FREQ.	PCT.-FREQ.	CUM.-PCT.-FQ.
21.55 -	21.74	1	1	.34	.34
21.75 -	21.94	0	1	.00	.34
21.95 -	22.14	0	1	.00	.34
22.15 -	22.34	0	1	.00	.34
22.35 -	22.54	0	1	.00	.34
22.55 -	22.74	0	1	.00	.34
22.75 -	22.94	0	1	.00	.34
22.95 -	23.14	0	1	.00	.34
23.15 -	23.34	0	1	.00	.34
23.35 -	23.54	0	1	.00	.34
23.55 -	23.74	1	2	.34	.68
23.75 -	23.94	1	3	.34	1.03
23.95 -	24.14	1	4	.34	1.37
24.15 -	24.34	4	8	1.37	2.74
24.35 -	24.54	3	11	1.03	3.77
24.55 -	24.74	5	16	1.71	5.48
24.75 -	24.94	4	20	1.37	6.85
24.95 -	25.14	5	25	1.71	8.56
25.15 -	25.34	13	38	4.45	13.01
25.35 -	25.54	7	45	2.40	15.41
25.55 -	25.74	13	58	4.45	19.86
25.75 -	25.94	9	67	3.08	22.95
25:95 -	26.14	13	80	4.45	27.40
26.15 -	26.34	14	94	4.79	32.19
26.35 -	26.54	20	114	6.85	39.04
26.55 -	26.74	13	127	4.45	43.49
26.75 -	26.94	15	142	5.14	48.63
26.95 -	27.14	19	161	6.51	55.14
27.15 -	27.34	15	176	5.14	60.27
27.35 -	27.54	19	195	6.51	66.78
27.55 -	27.74	11	206	3.77	70.55
27.75 -	27.94	9	215	3.08	73.63
27.95 -	28.14	22	237	7.53	81.16
28.15 -	28.34	9	246	3.08	84.25
28.35 -	28.54	13	259	4.45	88.70
28.55 -	28.74	6	265	2.05	90.75
28.75 -	28.94	1	266	.34	91.10
28.95 -	29.14	9	275	3.08	94.18
29.15 -	29.34	5	280	1.71	95.89
29.35 -	29.54	4	284	1.37	97.26
29.55 -	29.74	3	287	1.03	98.29
29.75 -	29.94	1	288	.34	98.63
29.95 -	30.14	2	290	.68	99.32
30.15 -	30.34	2	292	.68	100.00

VARIABLE NO. 25--FOOT LENGTH,RIGHT   FEMALE DATA

-- INTERVALS --		ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
19.15 -	19.34	1	1	.20	.20
19.35 -	19.54	0	1	.00	.20
19.55 -	19.74	0	1	.00	.20
19.75 -	19.94	0	1	.00	.20
19.95 -	20.14	1	2	.20	.41
20.15 -	20.34	0	2	.00	.41
20.35 -	20.54	0	2	.00	.41
20.55 -	20.74	1	3	.20	.61
20.75 -	20.94	0	3	.00	.61
20.95 -	21.14	0	3	.00	.61
21.15 -	21.34	1	4	.20	.81
21.35 -	21.54	1	5	.20	1.02
21.55 -	21.74	3	8	.61	1.63
21.75 -	21.94	6	14	1.22	2.85
21.95 -	22.14	5	19	1.02	3.87
22.15 -	22.34	5	24	1.02	4.89
22.35 -	22.54	11	35	2.24	7.13
22.55 -	22.74	15	50	3.05	10.18
22.75 -	22.94	12	62	2.44	12.63
22.95 -	23.14	26	88	5.30	17.92
23.15 -	23.34	13	101	2.65	20.57
23.35 -	23.54	31	132	6.31	26.88
23.55 -	23.74	27	159	5.50	32.38
23.75 -	23.94	19	178	3.87	36.25
23.95 -	24.14	34	212	6.92	43.18
24.15 -	24.34	30	242	6.11	49.29
24.35 -	24.54	35	277	7.13	56.42
24.55 -	24.74	17	294	3.46	59.88
24.75 -	24.94	24	318	4.89	64.77
24.95 -	25.14	42	360	8.55	73.32
25.15 -	25.34	16	376	3.26	76.58
25.35 -	25.54	29	405	5.91	82.48
25.55 -	25.74	18	423	3.67	86.15
25.75 -	25.94	9	432	1.83	87.98
25.95 -	26.14	15	447	3.05	91.04
26.15 -	26.34	10	457	2.04	93.08
26.35 -	26.54	12	469	2.44	95.52
26.55 -	26.74	5	474	1.02	96.54
26.75 -	26.94	4	478	.81	97.35
26.95 -	27.14	7	485	1.43	98.78
27.15 -	27.34	1	486	.20	98.98
27.35 -	27.54	3	489	.61	99.59
27.55 -	27.74	1	490	.20	99.80
27.75 -	27.94	0	490	.00	99.80
27.95 -	28.14	0	490	.00	99.80
28.15 -	28.34	0	490	.00	99.80
28.35 -	28.54	1	491	.20	100.00

VARIABLE NO. 25--FOOT LENGTH, RIGHT

	MALE DATA			FEMALE DATA	
	* * * * *			* * * * *	

PERCENTILES

CENTIMETERS		INCHES	CENTIMETERS		INCHES
23.94	1ST	9.42	21.52	1ST	8.47
24.22	2ND	9.54	21.82	2ND	8.59
24.42	3RD	9.61	22.02	3RD	8.67
24.71	5TH	9.73	22.30	5TH	8.78
25.18	10TH	9.91	22.74	10TH	8.95
25.52	15TH	10.05	23.05	15TH	9.07
25.79	20TH	10.15	23.29	20TH	9.17
26.03	25TH	10.25	23.50	25TH	9.25
26.24	30TH	10.33	23.70	30TH	9.33
26.43	35TH	10.41	23.88	35TH	9.40
26.62	40TH	10.48	24.05	40TH	9.47
26.80	45TH	10.55	24.21	45TH	9.53
26.98	50TH	10.62	24.38	50TH	9.60
27.16	55TH	10.69	24.55	55TH	9.66
27.34	60TH	10.76	24.71	60TH	9.73
27.52	65TH	10.83	24.89	65TH	9.80
27.71	70TH	10.91	25.07	70TH	9.87
27.92	75TH	10.99	25.27	75TH	9.95
28.14	80TH	11.08	25.49	80TH	10.03
28.40	85TH	11.18	25.74	85TH	10.13
28.73	90TH	11.31	26.06	90TH	10.26
29.20	95TH	11.49	26.53	95TH	10.44
29.50	97TH	11.61	26.82	97TH	10.56
29.72	98TH	11.70	27.04	98TH	10.65
30.06	99TH	11.83	27.37	99TH	10.78

* * * * *

THE SUMMARY STATISTICS

CENTIMETERS		INCHES	CENTIMETERS		INCHES
26.96	MEAN	10.62	24.38	MEAN	9.60
.08	SE(M)	.03	.06	SE(M)	.02
1.37	ST DEV	.54	1.30	ST DEV	.51
.06	SE(SD)	.02	.04	SE(SD)	.02

* * * * *

COEFF. OF VARIATION		5.1%	COEFF. OF VARIATION		5.3%
SYMMETRY----VETA I		-.13	SYMMETRY----VETA I		-.07
KURTOSIS----VETA II		.13	KURTOSIS----VETA II		.24

* * * * *

NUMBER OF SUBJECTS		292	NUMBER OF SUBJECTS		491

134

26. BOF Breadth, Horizontal, Right

Landmark: 1st metatarsal-phalangeal protrusion

Instrument: Footboard and plain block

Position of Subject: Subject stands erect, right foot in the right measuring box, left foot in the left measuring box, and weight distributed equally on both feet. The right foot is positioned so that its medial side is parallel to the side of the box, the heel touches the rear of the box, and the 5th metatarsal-phalangeal joint touches the side of the box.

Procedure: With a plain block touching the widest part of the right foot at the 1st metatarsal-phalangeal joint, measure on the scale of the box the breadth of the foot.

VARIABLE NO. 26--BOF BRDTH,HOZ,RT   MALE DATA
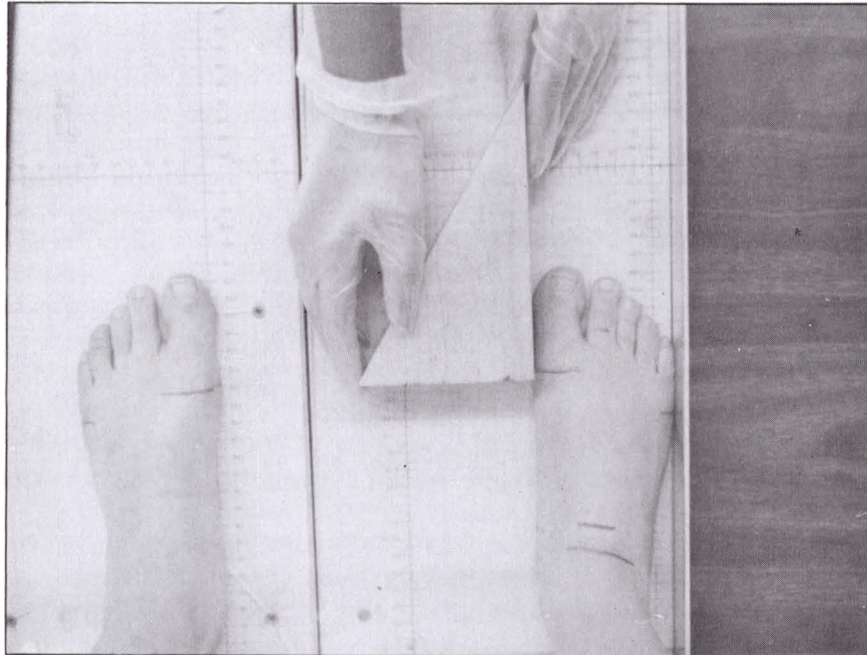
-- INTERVALS --

-- INTERVALS --		ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
8.65 -	8.74	2	2	.69	.69
8.75 -	8.84	0	2	.00	.69
8.85 -	8.94	0	2	.00	.69
8.95 -	9.04	6	8	2.06	2.75
9.05 -	9.14	3	11	1.03	3.78
9.15 -	9.24	1	12	.34	4.12
9.25 -	9.34	11	23	3.78	7.90
9.35 -	9.44	6	29	2.06	9.97
9.45 -	9.54	21	50	7.22	17.18
9.55 -	9.64	14	64	4.81	21.99
9.65 -	9.74	21	85	7.22	29.21
9.75 -	9.84	21	106	7.22	36.43
9.85 -	9.94	6	112	2.06	38.49
9.95 -	10.04	38	150	13.06	51.55
10.05 -	10.14	12	162	4.12	55.67
10.15 -	10.24	16	178	5.50	61.17
10.25 -	10.34	18	196	6.19	67.35
10.35 -	10.44	16	212	5.50	72.85
10.45 -	10.54	26	238	8.93	81.79
10.55 -	10.64	11	249	3.78	85.57
10.65 -	10.74	8	257	2.75	88.32
10.75 -	10.84	10	267	3.44	91.75
10.85 -	10.94	2	269	.69	92.44
10.95 -	11.04	11	280	3.78	96.22
11.05 -	11.14	2	282	.69	96.91
11.15 -	11.24	3	285	1.03	97.94
11.25 -	11.34	3	288	1.03	98.97
11.35 -	11.44	0	288	.00	98.97
11.45 -	11.54	2	290	.69	99.66
11.55 -	11.64	0	290	.00	99.66
11.65 -	11.74	0	290	.00	99.66
11.75 -	11.84	1	291	.34	100.00

VARIABLE NO. 26--BOF BRDTH,HOZ,RT   FEMALE DATA

-- INTERVALS --		ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
7.65 -	7.74	1	1	.20	.20
7.75 -	7.84	0	1	.00	.20
7.85 -	7.94	0	1	.00	.20
7.95 -	8.04	2	3	.41	.61
8.05 -	8.14	1	4	.20	.82
8.15 -	8.24	2	6	.41	1.22
8.25 -	8.34	12	18	2.45	3.67
8.35 -	8.44	8	26	1.63	5.31
8.45 -	8.54	26	52	5.31	10.61
8.55 -	8.64	12	64	2.45	13.06
8.65 -	8.74	28	92	5.71	18.78
8.75 -	8.84	26	118	5.31	24.08
8.85 -	8.94	32	150	6.53	30.61
8.95 -	9.04	96	246	19.59	50.20
9.05 -	9.14	22	268	4.49	54.69
9.15 -	9.24	45	313	9.18	63.88
9.25 -	9.34	23	336	4.69	68.57
9.35 -	9.44	27	363	5.51	74.08
9.45 -	9.54	42	405	8.57	82.65
9.55 -	9.64	15	420	3.06	85.71
9.65 -	9.74	21	441	4.29	90.00
9.75 -	9.84	16	457	3.27	93.27
9.85 -	9.94	11	468	2.24	95.51
9.95 -	10.04	10	478	2.04	97.55
10.05 -	10.14	3	481	.61	98.16
10.15 -	10.24	2	483	.41	98.57
10.25 -	10.34	4	487	.82	99.39
10.35 -	10.44	1	488	.20	99.59
10.45 -	10.54	1	489	.20	99.80
10.55 -	10.64	0	489	.00	99.80
10.65 -	10.74	1	490	.20	100.00

VARIABLE NO. 26--BOF BRDTH,HOZ,RT

MALE DATA					FEMALE DATA		
* * * * *					* * * * *		

PERCENTILES					PERCENTILES		
CENTIMETERS		INCHES			CENTIMETERS		INCHES
8.94	1ST	3.52			8.18	1ST	3.22
9.05	2ND	3.56			8.28	2ND	3.26
9.12	3RD	3.59			8.35	3RD	3.29
9.22	5TH	3.63			8.43	5TH	3.32
9.40	10TH	3.70			8.58	10TH	3.38
9.52	15TH	3.75			8.67	15TH	3.41
9.62	20TH	3.79			8.75	20TH	3.45
9.71	25TH	3.82			8.82	25TH	3.47
9.79	30TH	3.85			8.89	30TH	3.50
9.86	35TH	3.88			8.95	35TH	3.52
9.93	40TH	3.91			9.00	40TH	3.54
10.00	45TH	3.94			9.06	45TH	3.57
10.07	50TH	3.97			9.12	50TH	3.59
10.14	55TH	3.99			9.17	55TH	3.61
10.21	60TH	4.02			9.23	60TH	3.63
10.29	65TH	4.05			9.29	65TH	3.66
10.36	70TH	4.08			9.36	70TH	3.68
10.45	75TH	4.11			9.43	75TH	3.71
10.55	80TH	4.15			9.51	80TH	3.75
10.66	85TH	4.20			9.61	85TH	3.78
10.80	90TH	4.25			9.73	90TH	3.83
11.02	95TH	4.34			9.92	95TH	3.91
11.16	97TH	4.39			10.05	97TH	3.96
11.27	98TH	4.44			10.14	98TH	3.99
11.44	99TH	4.51			10.29	99TH	4.05

* * * * *   * * * * *

THE SUMMARY STATISTICS					THE SUMMARY STATISTICS		
CENTIMETERS		INCHES			CENTIMETERS		INCHES
10.09	MEAN	3.97			9.14	MEAN	3.60
.03	SE(M)	.01			.02	SE(M)	.01
.54	ST DEV	.21			.46	ST DEV	.18
.02	SE(SD)	.01			.01	SE(SD)	.01

* * * * *   * * * * *

COEFF. OF VARIATION	5.4%			COEFF. OF VARIATION	5.0%
SYMMETRY----VETA I	.19			SYMMETRY----VETA I	.25
KURTOSIS----VETA II	-.14			KURTOSIS----VETA II	.13

* * * * *   * * * * *

NUMBER OF SUBJECTS	291			NUMBER OF SUBJECTS	490

138

27. Outside BOF Length

Landmark: 5th metatarsal-phalangeal protrusion, medial aspect

Instrument: Footboard and plain block

Position of Subject: Subject stands erect, right foot in the right measuring box, left foot in the left measuring box, and weight distributed equally on both feet. The right foot is positioned so that its medial side is parallel to the edge of the box, the heel touches the rear of the box, and the 5th metatarsal-phalangeal joint is approximately 10 cm from the side of the box.

Procedure: With a plain block touching the foot at the medial landmark of the 5th metatarsal-phalangeal joint, measure on the scale of the box the length from the heel to the outside ball of the foot.
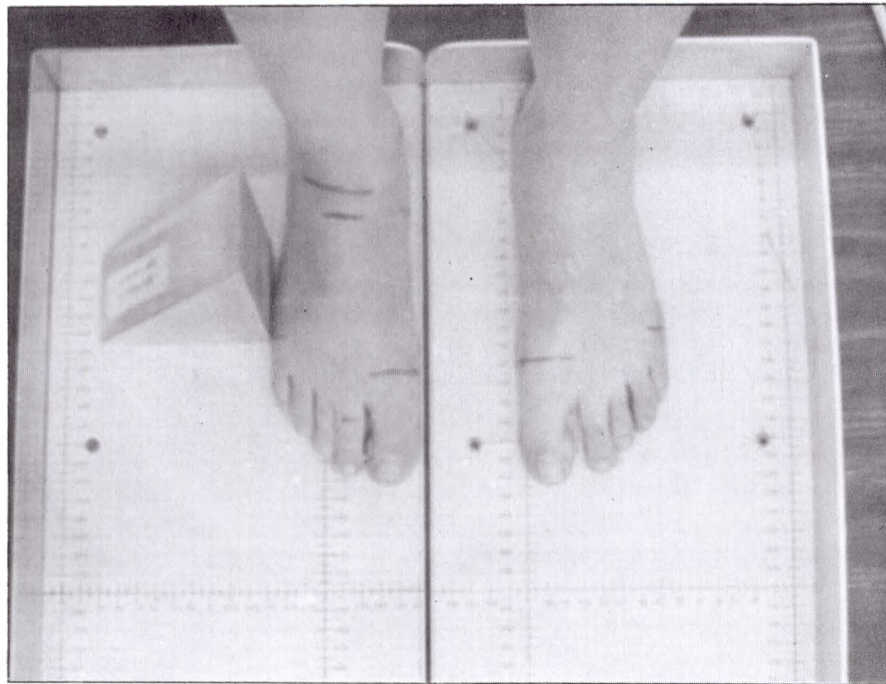
VARIABLE NO. 27--OUTSIDE BOF LENGTH   MALE DATA

-- INTERVALS --		ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
13.75 -	13.94	2	2	.68	.68
13.95 -	14.14	0	2	.00	.68
14.15 -	14.34	2	4	.68	1.37
14.35 -	14.54	2	6	.68	2.05
14.55 -	14.74	2	8	.68	2.73
14.75 -	14.94	3	11	1.02	3.75
14.95 -	15.14	9	20	3.07	6.83
15.15 -	15.34	10	30	3.41	10.24
15.35 -	15.54	13	43	4.44	14.68
15.55 -	15.74	7	50	2.39	17.06
15.75 -	15.94	19	69	6.48	23.55
15.95 -	16.14	25	94	8.53	32.08
16.15 -	16.34	17	111	5.80	37.88
16.35 -	16.54	28	139	9.56	47.44
16.55 -	16.74	13	152	4.44	51.88
16.75 -	16.94	18	170	6.14	58.02
16.95 -	17.14	30	200	10.24	68.26
17.15 -	17.34	15	215	5.12	73.38
17.35 -	17.54	22	237	7.51	80.89
17.55 -	17.74	17	254	5.80	86.69
17.75 -	17.94	12	266	4.10	90.78
17.95 -	18.14	12	278	4.10	94.88
18.15 -	18.34	3	281	1.02	95.90
18.35 -	18.54	3	284	1.02	96.93
18.55 -	18.74	3	287	1.02	97.95
18.75 -	18.94	3	290	1.02	98.98
18.95 -	19.14	0	290	.00	98.98
19.15 -	19.34	1	291	.34	99.32
19.35 -	19.54	0	291	.00	99.32
19.55 -	19.74	1	292	.34	99.66
19.75 -	19.94	1	293	.34	100.00

VARIABLE NO. 27--OUTSIDE BOF LENGTH   FEMALE DATA

-- INTERVALS --			ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
10.95	-	11.14	1	1	.20	.20
11.15	-	11.34	0	1	.00	.20
11.35	-	11.54	0	1	.00	.20
11.55	-	11.74	0	1	.00	.20
11.75	-	11.94	1	2	.20	.41
11.95	-	12.14	0	2	.00	.41
12.15	-	12.34	0	2	.00	.41
12.35	-	12.54	0	2	.00	.41
12.55	-	12.74	1	3	.20	.61
12.75	-	12.94	4	7	.81	1.43
12.95	-	13.14	13	20	2.65	4.07
13.15	-	13.34	6	26	1.22	5.30
13.35	-	13.54	17	43	3.46	8.76
13.55	-	13.74	17	60	3.46	12.22
13.75	-	13.94	17	77	3.46	15.68
13.95	-	14.14	25	102	5.09	20.77
14.15	-	14.34	29	131	5.91	26.68
14.35	-	14.54	39	170	7.94	34.62
14.55	-	14.74	40	210	8.15	42.77
14.75	-	14.94	36	246	7.33	50.10
14.95	-	15.14	57	303	11.61	61.71
15.15	-	15.34	32	335	6.52	68.23
15.35	-	15.54	33	368	6.72	74.95
15.55	-	15.74	23	391	4.68	79.63
15.75	-	15.94	27	418	5.50	85.13
15.95	-	16.14	16	434	3.26	88.39
16.15	-	16.34	17	451	3.46	91.85
16.35	-	16.54	15	466	3.05	94.91
16.55	-	16.74	9	475	1.83	96.74
16.75	-	16.94	5	480	1.02	97.76
16.95	-	17.14	7	487	1.43	99.19
17.15	-	17.34	2	489	.41	99.59
17.35	-	17.54	1	490	.20	99.80
17.55	-	17.74	1	491	.20	100.00

VARIABLE NO. 27--OUTSIDE BOF LENGTH

	MALE DATA			FEMALE DATA	
	* * * * *			* * * * *	

PERCENTILES			PERCENTILES		
CENTIMETERS		INCHES	CENTIMETERS		INCHES
14.29	1ST	5.63	12.79	1ST	5.04
14.55	2ND	5.73	13.00	2ND	5.12
14.72	3RD	5.80	13.14	3RD	5.17
14.97	5TH	5.89	13.34	5TH	5.25
15.35	10TH	6.04	13.66	10TH	5.38
15.61	15TH	6.15	13.89	15TH	5.47
15.82	20TH	6.23	14.08	20TH	5.54
16.00	25TH	6.30	14.25	25TH	5.61
16.15	30TH	6.36	14.39	30TH	5.67
16.30	35TH	6.42	14.53	35TH	5.72
16.43	40TH	6.47	14.66	40TH	5.77
16.56	45TH	6.52	14.79	45TH	5.82
16.68	50TH	6.57	14.92	50TH	5.87
16.81	55TH	6.62	15.05	55TH	5.92
16.93	60TH	6.67	15.17	60TH	5.97
17.06	65TH	6.72	15.31	65TH	6.03
17.19	70TH	6.77	15.45	70TH	6.08
17.33	75TH	6.82	15.60	75TH	6.14
17.49	80TH	6.89	15.76	80TH	6.21
17.68	85TH	6.96	15.96	85TH	6.28
17.92	90TH	7.06	16.20	90TH	6.38
18.30	95TH	7.20	16.55	95TH	6.51
18.56	97TH	7.31	16.77	97TH	6.60
18.77	98TH	7.39	16.93	98TH	6.67
19.12	99TH	7.53	17.18	99TH	6.77

	* * * * *			* * * * *	

THE SUMMARY STATISTICS			THE SUMMARY STATISTICS		
CENTIMETERS		INCHES	CENTIMETERS		INCHES
16.66	MEAN	6.56	14.92	MEAN	5.87
.06	SE(M)	.02	.04	SE(M)	.02
1.01	ST DEV	.40	.98	ST DEV	.39
.04	SE(SD)	.02	.03	SE(SD)	.01

	* * * * *			* * * * *	

COEFF. OF VARIATION	6.1%	COEFF. OF VARIATION	6.6%
SYMMETRY----VETA I	.01	SYMMETRY----VETA I	-.07
KURTOSIS----VETA II	.12	KURTOSIS----VETA II	.16

	* * * * *			* * * * *	

NUMBER OF SUBJECTS	293	NUMBER OF SUBJECTS	491

28. 5th Toe Length

Landmark: None

Instrument: Footboard and plain block

Position of Subject: Subject stands erect, right foot in the right measuring box, left foot in the left measuring box, and weight distributed equally on both feet. The right foot is positioned so that its medial side is parallel to the edge of the box, the heel touches the rear of the box, and the 5th metartarsal-phalangeal joint is approximately 10 cm from the side of the box.

Procedure: With a plain block touching the foot at the anterior tip of the 5th toe, measure on the scale of the box the length from the heel to the tip of the 5th toe.
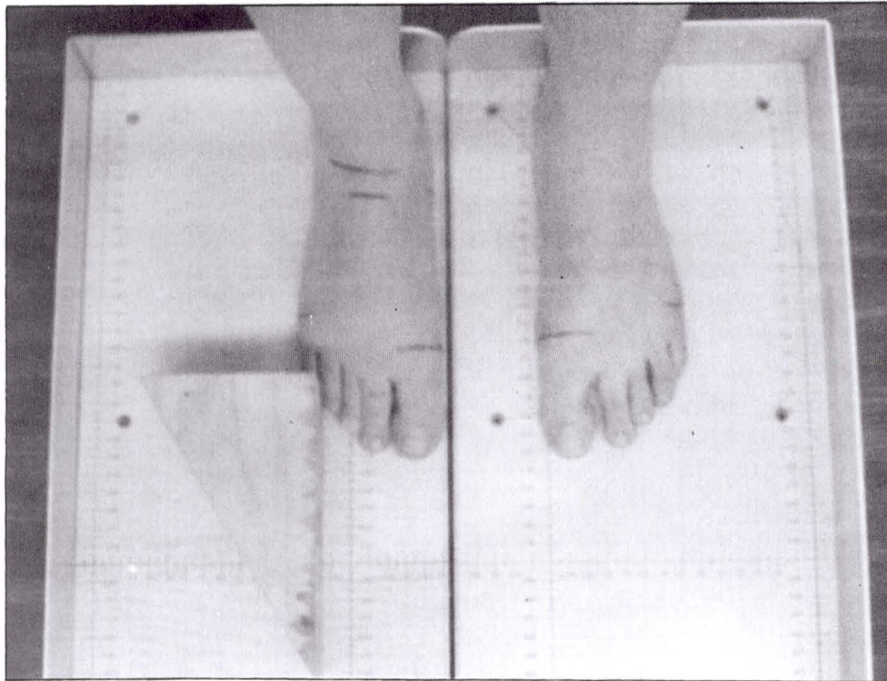
VARIABLE NO. 28--5TH TOE LENGTH   MALE DATA

-- INTERVALS --		-- FREQUENCIES --			
		ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
18.55 -	18.74	2	2	.69	.69
18.75 -	18.94	0	2	.00	.69
18.95 -	19.14	1	3	.34	1.03
19.15 -	19.34	0	3	.00	1.03
19.35 -	19.54	3	6	1.03	2.07
19.55 -	19.74	5	11	1.72	3.79
19.75 -	19.94	7	18	2.41	6.21
19.95 -	20.14	7	25	2.41	8.62
20.15 -	20.34	8	33	2.76	11.38
20.35 -	20.54	16	49	5.52	16.90
20.55 -	20.74	7	56	2.41	19.31
20.75 -	20.94	15	71	5.17	24.48
20.95 -	21.14	18	89	6.21	30.69
21.15 -	21.34	21	110	7.24	37.93
21.35 -	21.54	27	137	9.31	47.24
21.55 -	21.74	18	155	6.21	53.45
21.75 -	21.94	21	176	7.24	60.69
21.95 -	22.14	11	187	3.79	64.48
22.15 -	22.34	15	202	5.17	69.66
22.35 -	22.54	15	217	5.17	74.83
22.55 -	22.74	14	231	4.83	79.66
22.75 -	22.94	21	252	7.24	86.90
22.95 -	23.14	9	261	3.10	90.00
23.15 -	23.34	5	266	1.72	91.72
23.35 -	23.54	7	273	2.41	94.14
23.55 -	23.74	4	277	1.38	95.52
23.75 -	23.94	4	281	1.38	96.90
23.95 -	24.14	4	285	1.38	98.28
24.15 -	24.34	3	288	1.03	99.31
24.35 -	24.54	1	289	.34	99.66
24.55 -	24.74	0	289	.00	99.66
24.75 -	24.94	0	289	.00	99.66
24.95 -	25.14	1	290	.34	100.00

VARIABLE NO. 28--5TH TOE LENGTH   FEMALE DATA

-- INTERVALS --		ACTUAL FREQ.	CUM.-FREQ.	PCT.-FREQ.	CUM.-PCT.-FQ.
14.95 -	15.14	1	1	.20	.20
15.15 -	15.34	0	1	.00	.20
15.35 -	15.54	1	2	.20	.41
15.55 -	15.74	0	2	.00	.41
15.75 -	15.94	0	2	.00	.41
15.95 -	16.14	0	2	.00	.41
16.15 -	16.34	1	3	.20	.61
16.35 -	16.54	0	3	.00	.61
16.55 -	16.74	0	3	.00	.61
16.75 -	16.94	0	3	.00	.61
16.95 -	17.14	3	6	.61	1.23
17.15 -	17.34	4	10	.82	2.04
17.35 -	17.54	6	16	1.23	3.27
17.55 -	17.74	9	25	1.84	5.11
17.75 -	17.94	9	34	1.84	6.95
17.95 -	18.14	15	49	3.07	10.02
18.15 -	18.34	15	64	3.07	13.09
18.35 -	18.54	16	80	3.27	16.36
18.55 -	18.74	28	108	5.73	22.09
18.75 -	18.94	27	135	5.52	27.61
18.95 -	19.14	35	170	7.16	34.76
19.15 -	19.34	45	215	9.20	43.97
19.35 -	19.54	24	239	4.91	48.88
19.55 -	19.74	39	278	7.98	56.85
19.75 -	19.94	34	312	6.95	63.80
19.95 -	20.14	40	352	8.18	71.98
20.15 -	20.34	21	373	4.29	76.28
20.35 -	20.54	26	399	5.32	81.60
20.55 -	20.74	14	413	2.86	84.46
20.75 -	20.94	17	430	3.48	87.93
20.95 -	21.14	17	447	3.48	91.41
21.15 -	21.34	17	464	3.48	94.89
21.35 -	21.54	8	472	1.64	96.52
21.55 -	21.74	5	477	1.02	97.55
21.75 -	21.94	5	482	1.02	98.57
21.95 -	22.14	2	484	.41	98.98
22.15 -	22.34	2	486	.41	99.39
22.35 -	22.54	3	489	.61	100.00

VARIABLE NO. 28--5TH TOE LENGTH

MALE DATA			FEMALE DATA		
* * * * *			* * * * *		

PERCENTILES			PERCENTILES		
CENTIMETERS		INCHES	CENTIMETERS		INCHES
19.16	1ST	7.54	17.05	1ST	6.71
19.47	2ND	7.66	17.34	2ND	6.83
19.65	3RD	7.74	17.53	3RD	6.90
19.90	5TH	7.83	17.78	5TH	7.00
20.28	10TH	7.98	18.17	10TH	7.15
20.53	15TH	8.08	18.43	15TH	7.26
20.74	20TH	8.16	18.64	20TH	7.34
20.92	25TH	8.24	18.83	25TH	7.41
21.08	30TH	8.30	18.99	30TH	7.48
21.24	35TH	8.36	19.14	35TH	7.54
21.39	40TH	8.42	19.29	40TH	7.59
21.54	45TH	8.48	19.43	45TH	7.65
21.68	50TH	8.54	19.57	50TH	7.70
21.83	55TH	8.60	19.71	55TH	7.76
21.99	60TH	8.66	19.85	60TH	7.81
22.15	65TH	8.72	19.99	65TH	7.87
22.32	70TH	8.79	20.15	70TH	7.93
22.50	75TH	8.86	20.32	75TH	8.00
22.71	80TH	8.94	20.50	80TH	8.07
22.95	85TH	9.03	20.72	85TH	8.16
23.24	90TH	9.15	20.99	90TH	8.27
23.66	95TH	9.32	21.40	95TH	8.42
23.92	97TH	9.42	21.66	97TH	8.53
24.09	98TH	9.48	21.85	98TH	8.60
24.32	99TH	9.57	22.15	99TH	8.72

* * * * *   * * * * *

THE SUMMARY STATISTICS			THE SUMMARY STATISTICS		
CENTIMETERS		INCHES	CENTIMETERS		INCHES
21.72	MEAN	8.55	19.57	MEAN	7.70
.07	SE(M)	.03	.05	SE(M)	.02
1.14	ST DEV	.45	1.12	ST DEV	.44
.05	SE(SD)	.02	.04	SE(SD)	.01

* * * * *   * * * * *

COEFF. OF VARIATION	5.2%	COEFF. OF VARIATION	5.7%
SYMMETRY----VETA I	.07	SYMMETRY----VETA I	-.14
KURTOSIS----VETA II	-.20	KURTOSIS----VETA II	.47

* * * * *   * * * * *

NUMBER OF SUBJECTS	290	NUMBER OF SUBJECTS	489

29. BOF Length, Left

Landmark: 5th metatarsal-phalangeal protrusion, medial aspect

Instrument: Footboard and plain block

Position of Subject: Subject stands erect, left foot in the left measuring box, right foot in the right measuring box, and weight distributed equally on both feet. The left foot is positioned so that its medial side is parallel to the side of the box, the heel touches the rear of the box, and the 5th metatarsal-phalangeal joint touches the side of the box.

Procedure: With a plain block touching the widest part of the left foot at the medial landmark of the 1st metatarsal-phalangeal joint, measure on the scale of the box the length from the heel to the ball of the foot.

[SEE BOF LENGTH, RIGHT FOR PHOTOGRAPH]

VARIABLE NO. 29--BOF LENGTH,LEFT   MALE DATA

-- INTERVALS --   -- FREQUENCIES --

INTERVALS		ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
16.75 -	16.94	1	1	.34	.34
16.95 -	17.14	1	2	.34	.68
17.15 -	17.34	1	3	.34	1.02
17.35 -	17.54	5	8	1.71	2.73
17.55 -	17.74	3	11	1.02	3.75
17.75 -	17.94	5	16	1.71	5.46
17.95 -	18.14	13	29	4.44	9.90
18.15 -	18.34	9	38	3.07	12.97
18.35 -	18.54	28	66	9.56	22.53
18.55 -	18.74	11	77	3.75	26.28
18.75 -	18.94	19	96	6.48	32.76
18.95 -	19.14	16	112	5.46	38.23
19.15 -	19.34	17	129	5.80	44.03
19.35 -	19.54	25	154	8.53	52.56
19.55 -	19.74	18	172	6.14	58.70
19.75 -	19.94	12	184	4.10	62.80
19.95 -	20.14	26	210	8.87	71.67
20.15 -	20.34	23	233	7.85	79.52
20.35 -	20.54	9	242	3.07	82.59
20.55 -	20.74	10	252	3.41	86.01
20.75 -	20.94	9	261	3.07	89.08
20.95 -	21.14	8	269	2.73	91.81
21.15 -	21.34	4	273	1.37	93.17
21.35 -	21.54	4	277	1.37	94.54
21.55 -	21.74	4	281	1.37	95.90
21.75 -	21.94	4	285	1.37	97.27
21.95 -	22.14	1	286	.34	97.61
22.15 -	22.34	3	289	1.02	98.63
22.35 -	22.54	2	291	.68	99.32
22.55 -	22.74	2	293	.68	100.00

148

VARIABLE NO. 29--BOF LENGTH,LEFT   FEMALE DATA

-- INTERVALS --   -- FREQUENCIES --

		ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
10.75 -	10.94	1	1	.20	.20
10.95 -	11.14	0	1	.00	.20
11.15 -	11.34	0	1	.00	.20
11.35 -	11.54	0	1	.00	.20
11.55 -	11.74	0	1	.00	.20
11.75 -	11.94	0	1	.00	.20
11.95 -	12.14	0	1	.00	.20
12.15 -	12.34	0	1	.00	.20
12.35 -	12.54	0	1	.00	.20
12.55 -	12.74	0	1	.00	.20
12.75 -	12.94	0	1	.00	.20
12.95 -	13.14	0	1	.00	.20
13.15 -	13.34	0	1	.00	.20
13.35 -	13.54	0	1	.00	.20
13.55 -	13.74	0	1	.00	.20
13.75 -	13.94	2	3	.41	.61
13.95 -	14.14	0	3	.00	.61
14.15 -	14.34	0	3	.00	.61
14.35 -	14.54	1	4	.20	.82
14.55 -	14.74	1	5	.20	1.02
14.75 -	14.94	0	5	.00	1.02
14.95 -	15.14	1	6	.20	1.22
15.15 -	15.34	0	6	.00	1.22
15.35 -	15.54	0	6	.00	1.22
15.55 -	15.74	6	12	1.22	2.45
15.75 -	15.94	8	20	1.63	4.08
15.95 -	16.14	16	36	3.27	7.35
16.15 -	16.34	12	48	2.45	9.80
16.35 -	16.54	19	67	3.88	13.67
16.55 -	16.74	25	92	5.10	18.78
16.75 -	16.94	17	109	3.47	22.24
16.95 -	17.14	46	155	9.39	31.63
17.15 -	17.34	37	192	7.55	39.18
17.35 -	17.54	43	235	8.78	47.96
17.55 -	17.74	33	268	6.73	54.69
17.75 -	17.94	28	296	5.71	60.41
17.95 -	18.14	34	330	6.94	67.35
18.15 -	18.34	35	365	7.14	74.49
18.35 -	18.54	28	393	5.71	80.20
18.55 -	18.74	26	419	5.31	85.51
18.75 -	18.94	22	441	4.49	90.00
18.95 -	19.14	21	462	4.29	94.29
19.15 -	19.34	6	468	1.22	95.51
19.35 -	19.54	8	476	1.63	97.14
19.55 -	19.74	2	478	.41	97.55
19.75 -	19.94	5	483	1.02	98.57
19.95 -	20.14	2	485	.41	98.98
20.15 -	20.34	3	488	.61	99.59
20.35 -	20.54	2	490	.41	100.00

VARIABLE NO. 29--BOF LENGTH,LEFT

MALE DATA			FEMALE DATA		

* * * * *　　　　　　　　　　　　　* * * * *

PERCENTILES			PERCENTILES		
CENTIMETERS		INCHES	CENTIMETERS		INCHES
17.31	1ST	6.82	14.94	1ST	5.88
17.50	2ND	6.89	15.43	2ND	6.07
17.64	3RD	6.94	15.69	3RD	6.18
17.83	5TH	7.02	16.01	5TH	6.30
18.14	10TH	7.14	16.43	10TH	6.47
18.37	15TH	7.23	16.68	15TH	6.57
18.56	20TH	7.31	16.86	20TH	6.64
18.73	25TH	7.38	17.02	25TH	6.70
18.89	30TH	7.44	17.15	30TH	6.75
19.04	35TH	7.50	17.28	35TH	6.80
19.18	40TH	7.55	17.40	40TH	6.85
19.33	45TH	7.61	17.52	45TH	6.90
19.47	50TH	7.66	17.63	50TH	6.94
19.61	55TH	7.72	17.75	55TH	6.99
19.76	60TH	7.78	17.88	60TH	7.04
19.92	65TH	7.84	18.01	65TH	7.09
20.09	70TH	7.91	18.15	70TH	7.15
20.28	75TH	7.98	18.31	75TH	7.21
20.49	80TH	8.07	18.49	80TH	7.28
20.74	85TH	8.17	18.70	85TH	7.36
21.07	90TH	8.29	18.98	90TH	7.47
21.56	95TH	8.49	19.38	95TH	7.63
21.89	97TH	8.62	19.64	97TH	7.73
22.14	98TH	8.71	19.82	98TH	7.80
22.53	99TH	8.87	20.07	99TH	7.90

* * * * *　　　　　　　　　　　　　* * * * *

THE SUMMARY STATISTICS			THE SUMMARY STATISTICS		
CENTIMETERS		INCHES	CENTIMETERS		INCHES
19.55	MEAN	7.70	17.64	MEAN	6.94
.07	SE(M)	.03	.05	SE(M)	.02
1.12	ST DEV	.44	1.07	ST DEV	.42
.05	SE(SD)	.02	.03	SE(SD)	.01

* * * * *　　　　　　　　　　　　　* * * * *

COEFF. OF VARIATION	5.7%	COEFF. OF VARIATION	6.1%
SYMMETRY----VETA I	.34	SYMMETRY----VETA I	-.60
KURTOSIS----VETA II	-.12	KURTOSIS----VETA II	3.27

* * * * *　　　　　　　　　　　　　* * * * *

NUMBER OF SUBJECTS	293	NUMBER OF SUBJECTS	490

30. Foot Length, Left

Landmark: None

Instrument: Footboard and plain block

Position of Subject: Subject stands erect, left foot in the left measuring box, right foot in the right measuring box, and weight distributed equally on both feet. The left foot is positioned so that its medial side is parallel to the side of the box, the heel touches the rear of the box, and the 5th metatarsal-phalangeal joint touches the side of the box.

Procedure: With a plain block touching the anterior tip of the most protruding toe, measure on the scale of the box the length of the left foot. Record the most protruding toe.

[SEE FOOT LENGTH, RIGHT FOR PHOTOGRAPH]

VARIABLE NO. 30--FOOT LENGTH,LEFT   MALE DATA

-- INTERVALS --		-- FREQUENCIES --			
		ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
23.75 -	23.94	1	1	.34	.34
23.95 -	24.14	2	3	.68	1.03
24.15 -	24.34	0	3	.00	1.03
24.35 -	24.54	9	12	3.08	4.11
24.55 -	24.74	4	16	1.37	5.48
24.75 -	24.94	4	20	1.37	6.85
24.95 -	25.14	5	25	1.71	8.56
25.15 -	25.34	10	35	3.42	11.99
25.35 -	25.54	11	46	3.77	15.75
25.55 -	25.74	10	56	3.42	19.18
25.75 -	25.94	18	74	6.16	25.34
25.95 -	26.14	8	82	2.74	28.08
26.15 -	26.34	19	101	6.51	34.59
26.35 -	26.54	19	120	6.51	41.10
26.55 -	26.74	10	130	3.42	44.52
26.75 -	26.94	13	143	4.45	48.97
26.95 -	27.14	28	171	9.59	58.56
27.15 -	27.34	21	192	7.19	65.75
27.35 -	27.54	8	200	2.74	68.49
27.55 -	27.74	10	210	3.42	71.92
27.75 -	27.94	16	226	5.48	77.40
27.95 -	28.14	19	245	6.51	83.90
28.15 -	28.34	7	252	2.40	86.30
28.35 -	28.54	12	264	4.11	90.41
28.55 -	28.74	1	265	.34	90.75
28.75 -	28.94	7	272	2.40	93.15
28.95 -	29.14	5	277	1.71	94.86
29.15 -	29.34	4	281	1.37	96.23
29.35 -	29.54	3	284	1.03	97.26
29.55 -	29.74	2	286	.68	97.95
29.75 -	29.94	0	286	.00	97.95
29.95 -	30.14	5	291	1.71	99.66
30.15 -	30.34	1	292	.34	100.00

VARIABLE NO. 30--FOOT LENGTH,LEFT   FEMALE DATA

| -- INTERVALS -- | | -- FREQUENCIES -- | | | |
		ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
19.35 -	19.54	1	1	.20	.20
19.55 -	19.74	1	2	.20	.41
19.75 -	19.94	0	2	.00	.41
19.95 -	20.14	0	2	.00	.41
20.15 -	20.34	0	2	.00	.41
20.35 -	20.54	1	3	.20	.61
20.55 -	20.74	0	3	.00	.61
20.75 -	20.94	0	3	.00	.61
20.95 -	21.14	0	3	.00	.61
21.15 -	21.34	0	3	.00	.61
21.35 -	21.54	3	6	.61	1.22
21.55 -	21.74	2	8	.41	1.63
21.75 -	21.94	3	11	.61	2.24
21.95 -	22.14	7	18	1.43	3.67
22.15 -	22.34	9	27	1.83	5.50
22.35 -	22.54	10	37	2.04	7.54
22.55 -	22.74	19	56	3.87	11.41
22.75 -	22.94	9	65	1.83	13.24
22.95 -	23.14	24	89	4.89	18.13
23.15 -	23.34	14	103	2.85	20.98
23.35 -	23.54	31	134	6.31	27.29
23.55 -	23.74	24	158	4.89	32.18
23.75 -	23.94	20	178	4.07	36.25
23.95 -	24.14	31	209	6.31	42.57
24.15 -	24.34	43	252	8.76	51.32
24.35 -	24.54	27	279	5.50	56.82
24.55 -	24.74	20	299	4.07	60.90
24.75 -	24.94	30	329	6.11	67.01
24.95 -	25.14	31	360	6.31	73.32
25.15 -	25.34	25	385	5.09	78.41
25.35 -	25.54	21	406	4.28	82.69
25.55 -	25.74	13	419	2.65	85.34
25.75 -	25.94	11	430	2.24	87.58
25.95 -	26.14	17	447	3.46	91.04
26.15 -	26.34	17	464	3.46	94.50
26.35 -	26.54	11	475	2.24	96.74
26.55 -	26.74	5	480	1.02	97.76
26.75 -	26.94	2	482	.41	98.17
26.95 -	27.14	5	487	1.02	99.19
27.15 -	27.34	1	488	.20	99.39
27.35 -	27.54	2	490	.41	99.80
27.55 -	27.74	0	490	.00	99.80
27.75 -	27.94	0	490	.00	99.80
27.95 -	28.14	0	490	.00	99.80
28.15 -	28.34	0	490	.00	99.80
28.35 -	28.54	1	491	.20	100.00

VARIABLE NO. 30--FOOT LENGTH,LEFT

MALE DATA			FEMALE DATA		
* * * * *			* * * * *		

PERCENTILES			PERCENTILES		
CENTIMETERS		INCHES	CENTIMETERS		INCHES
24.14	1ST	9.50	21.52	1ST	8.47
24.36	2ND	9.59	21.82	2ND	8.59
24.52	3RD	9.65	22.02	3RD	8.67
24.77	5TH	9.75	22.30	5TH	8.78
25.19	10TH	9.92	22.73	10TH	8.95
25.50	15TH	10.04	23.03	15TH	9.07
25.76	20TH	10.14	23.27	20TH	9.16
25.98	25TH	10.23	23.49	25TH	9.25
26.18	30TH	10.31	23.68	30TH	9.32
26.37	35TH	10.38	23.86	35TH	9.39
26.55	40TH	10.45	24.03	40TH	9.46
26.72	45TH	10.52	24.19	45TH	9.52
26.89	50TH	10.59	24.36	50TH	9.59
27.06	55TH	10.65	24.52	55TH	9.65
27.24	60TH	10.72	24.69	60TH	9.72
27.41	65TH	10.79	24.86	65TH	9.79
27.60	70TH	10.87	25.04	70TH	9.86
27.81	75TH	10.95	25.24	75TH	9.94
28.03	80TH	11.04	25.46	80TH	10.02
28.30	85TH	11.14	25.70	85TH	10.12
28.64	90TH	11.27	26.00	90TH	10.24
29.15	95TH	11.48	26.42	95TH	10.40
29.50	97TH	11.61	26.68	97TH	10.50
29.76	98TH	11.72	26.85	98TH	10.57
30.19	99TH	11.89	27.09	99TH	10.67

* * * * *   * * * * *

THE SUMMARY STATISTICS			THE SUMMARY STATISTICS		
CENTIMETERS		INCHES	CENTIMETERS		INCHES
26.91	MEAN	10.59	24.36	MEAN	9.59
.08	SE(M)	.03	.06	SE(M)	.02
1.31	ST DEV	.52	1.28	ST DEV	.50
.05	SE(SD)	.02	.04	SE(SD)	.02

* * * * *   * * * * *

COEFF. OF VARIATION	4.9%	COEFF. OF VARIATION	5.3%
SYMMETRY----VETA I	.13	SYMMETRY----VETA I	-.14
KURTOSIS----VETA II	-.34	KURTOSIS----VETA II	.25

* * * * *   * * * * *

NUMBER OF SUBJECTS	292	NUMBER OF SUBJECTS	491

## 31. BOF Breadth, Horizontal, Left

Landmark: 1st metatarsal-phalangeal protrusion

Instrument: Footboard and plain block

Position of Subject: Subject stands erect, left foot in the left measuring box, right foot in the right measuring box, and weight distributed equally on both feet. The left foot is positioned so that its medial side is parallel to the side of the box, the heel touches the rear of the box, and the 5th metatarsal-phalangeal joint touches the side of the box.

Procedure: With a plain block touching the widest part of the left foot at the 1st metatarsal-phalangeal joint, measure on the scale of the box the breadth of the foot.

[SEE BOF BREADTH, HORIZONTAL, RIGHT FOR PHOTOGRAPH]

VARIABLE NO. 31--BOF BRDTH,HOZ,LEFT   MALE DATA

-- INTERVALS --		ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
8.85 -	8.94	1	1	.34	.34
8.95 -	9.04	8	9	2.75	3.09
9.05 -	9.14	5	14	1.72	4.81
9.15 -	9.24	4	18	1.37	6.19
9.25 -	9.34	7	25	2.41	8.59
9.35 -	9.44	5	30	1.72	10.31
9.45 -	9.54	15	45	5.15	15.46
9.55 -	9.64	14	59	4.81	20.27
9.65 -	9.74	23	82	7.90	28.18
9.75 -	9.84	19	101	6.53	34.71
9.85 -	9.94	14	115	4.81	39.52
9.95 -	10.04	49	164	16.84	56.36
10.05 -	10.14	9	173	3.09	59.45
10.15 -	10.24	8	181	2.75	62.20
10.25 -	10.34	14	195	4.81	67.01
10.35 -	10.44	22	217	7.56	74.57
10.45 -	10.54	27	244	9.28	83.85
10.55 -	10.64	5	249	1.72	85.57
10.65 -	10.74	6	255	2.06	87.63
10.75 -	10.84	8	263	2.75	90.38
10.85 -	10.94	3	266	1.03	91.41
10.95 -	11.04	10	276	3.44	94.85
11.05 -	11.14	5	281	1.72	96.56
11.15 -	11.24	2	283	.69	97.25
11.25 -	11.34	1	284	.34	97.59
11.35 -	11.44	1	285	.34	97.94
11.45 -	11.54	5	290	1.72	99.66
11.55 -	11.64	1	291	.34	100.00

VARIABLE NO. 31--BOF BRDTH,HOZ,LEFT   FEMALE DATA

-- INTERVALS --

-- FREQUENCIES --

INTERVALS		ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
7.65 -	7.74	1	1	.20	.20
7.75 -	7.84	0	1	.00	.20
7.85 -	7.94	0	1	.00	.20
7.95 -	8.04	5	6	1.02	1.22
8.05 -	8.14	2	8	.41	1.63
8.15 -	8.24	8	16	1.63	3.27
8.25 -	8.34	14	30	2.86	6.12
8.35 -	8.44	13	43	2.65	8.78
8.45 -	8.54	23	66	4.69	13.47
8.55 -	8.64	21	87	4.29	17.76
8.65 -	8.74	30	117	6.12	23.88
8.75 -	8.84	19	136	3.88	27.76
8.85 -	8.94	24	160	4.90	32.65
8.95 -	9.04	85	245	17.35	50.00
9.05 -	9.14	35	280	7.14	57.14
9.15 -	9.24	30	310	6.12	63.27
9.25 -	9.34	39	349	7.96	71.22
9.35 -	9.44	26	375	5.31	76.53
9.45 -	9.54	31	406	6.33	82.86
9.55 -	9.64	15	421	3.06	85.92
9.65 -	9.74	17	438	3.47	89.39
9.75 -	9.84	11	449	2.24	91.63
9.85 -	9.94	14	463	2.86	94.49
9.95 -	10.04	16	479	3.27	97.76
10.05 -	10.14	3	482	.61	98.37
10.15 -	10.24	4	486	.82	99.18
10.25 -	10.34	0	486	.00	99.18
10.35 -	10.44	1	487	.20	99.39
10.45 -	10.54	3	490	.61	100.00

VARIABLE NO. 31--BOF BRDTH,HOZ,LEFT

MALE DATA					FEMALE DATA		

* * * * *   * * * * *

PERCENTILES

CENTIMETERS		INCHES			CENTIMETERS		INCHES
8.92	1ST	3.51			8.03	1ST	3.16
9.03	2ND	3.56			8.16	2ND	3.21
9.11	3RD	3.59			8.23	3RD	3.24
9.22	5TH	3.63			8.34	5TH	3.28
9.39	10TH	3.70			8.50	10TH	3.35
9.51	15TH	3.74			8.61	15TH	3.39
9.61	20TH	3.78			8.69	20TH	3.42
9.69	25TH	3.82			8.77	25TH	3.45
9.77	30TH	3.85			8.84	30TH	3.48
9.85	35TH	3.88			8.90	35TH	3.51
9.92	40TH	3.90			8.97	40TH	3.53
9.99	45TH	3.93			9.03	45TH	3.55
10.05	50TH	3.96			9.09	50TH	3.58
10.12	55TH	3.99			9.15	55TH	3.60
10.20	60TH	4.01			9.21	60TH	3.63
10.27	65TH	4.04			9.28	65TH	3.65
10.35	70TH	4.08			9.35	70TH	3.68
10.44	75TH	4.11			9.43	75TH	3.71
10.54	80TH	4.15			9.52	80TH	3.75
10.66	85TH	4.20			9.62	85TH	3.79
10.82	90TH	4.26			9.74	90TH	3.84
11.06	95TH	4.35			9.93	95TH	3.91
11.23	97TH	4.42			10.04	97TH	3.95
11.36	98TH	4.47			10.11	98TH	3.98
11.57	99TH	4.56			10.22	99TH	4.03

* * * * *   * * * * *

THE SUMMARY STATISTICS

CENTIMETERS		INCHES			CENTIMETERS		INCHES
10.09	MEAN	3.97			9.11	MEAN	3.59
.03	SE(M)	.01			.02	SE(M)	.01
.55	ST DEV	.22			.49	ST DEV	.19
.02	SE(SD)	.01			.02	SE(SD)	.01

* * * * *   * * * * *

COEFF. OF VARIATION	5.5%			COEFF. OF VARIATION	5.3%
SYMMETRY----VETA I	.32			SYMMETRY----VETA I	.15
KURTOSIS----VETA II	-.08			KURTOSIS----VETA II	-.11

* * * * *   * * * * *

NUMBER OF SUBJECTS	291			NUMBER OF SUBJECTS	490

32. Bimalleolar Breadth

Landmark: None

Instrument: Footboard and anthropometer configured as a beam caliper

Position of Subject: Subject stands erect, left foot in the left measuring box, right foot in the right measuring box, and weight distributed equally on both feet.

Procedure: With a beam caliper held horizontally, adjust the arms of the caliper so that they just brush the medial and lateral malleoli when the arms are moved up and down, parallel to the long axis of the foot.
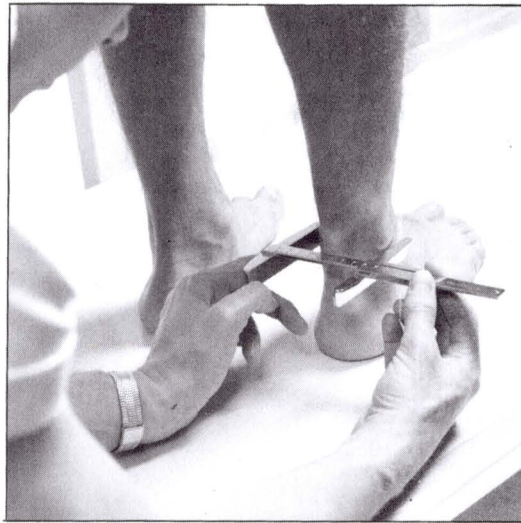
VARIABLE NO. 32--BIMALLEOLAR BRDTH   MALE DATA

-- INTERVALS --		-- FREQUENCIES --			
		ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
6.05 -	6.14	1	1	.34	.34
6.15 -	6.24	0	1	.00	.34
6.25 -	6.34	0	1	.00	.34
6.35 -	6.44	2	3	.68	1.02
6.45 -	6.54	4	7	1.37	2.39
6.55 -	6.64	10	17	3.41	5.80
6.65 -	6.74	6	23	2.05	7.85
6.75 -	6.84	18	41	6.14	13.99
6.85 -	6.94	10	51	3.41	17.41
6.95 -	7.04	24	75	8.19	25.60
7.05 -	7.14	28	103	9.56	35.15
7.15 -	7.24	23	126	7.85	43.00
7.25 -	7.34	43	169	14.68	57.68
7.35 -	7.44	23	192	7.85	65.53
7.45 -	7.54	23	215	7.85	73.38
7.55 -	7.64	17	232	5.80	79.18
7.65 -	7.74	15	247	5.12	84.30
7.75 -	7.84	15	262	5.12	89.42
7.85 -	7.94	11	273	3.75	93.17
7.95 -	8.04	12	285	4.10	97.27
8.05 -	8.14	3	288	1.02	98.29
8.15 -	8.24	4	292	1.37	99.66
8.25 -	8.34	0	292	.00	99.66
8.35 -	8.44	0	292	.00	99.66
8.45 -	8.54	1	293	.34	100.00

VARIABLE NO. 32--BIMALLEOLAR BRDTH   FEMALE DATA

-- INTERVALS --		ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
5.45 -	5.54	2	2	.41	.41
5.55 -	5.64	1	3	.20	.61
5.65 -	5.74	3	6	.61	1.22
5.75 -	5.84	9	15	1.83	3.05
5.85 -	5.94	10	25	2.04	5.09
5.95 -	6.04	23	48	4.68	9.78
6.05 -	6.14	26	74	5.30	15.07
6.15 -	6.24	34	108	6.92	22.00
6.25 -	6.34	40	148	8.15	30.14
6.35 -	6.44	64	212	13.03	43.18
6.45 -	6.54	51	263	10.39	53.56
6.55 -	6.64	60	323	12.22	65.78
6.65 -	6.74	46	369	9.37	75.15
6.75 -	6.84	41	410	8.35	83.50
6.85 -	6.94	23	433	4.68	88.19
6.95 -	7.04	26	459	5.30	93.48
7.05 -	7.14	12	471	2.44	95.93
7.15 -	7.24	12	483	2.44	98.37
7.25 -	7.34	4	487	.81	99.19
7.35 -	7.44	2	489	.41	99.59
7.45 -	7.54	2	491	.41	100.00

Note: The -- FREQUENCIES -- header spans the ACTUAL FREQ., CUM.-FREQ., PCT.-FREQ., and CUM.-PCT.-FQ. columns.

VARIABLE NO. 32--BIMALLEOLAR BRDTH

MALE DATA

* * * * *

PERCENTILES

CENTIMETERS		INCHES		CENTIMETERS		INCHES
6.43	1ST	2.53		5.70	1ST	2.25
6.52	2ND	2.57		5.80	2ND	2.28
6.58	3RD	2.59		5.86	3RD	2.31
6.66	5TH	2.62		5.94	5TH	2.34
6.79	10TH	2.67		6.07	10TH	2.39
6.88	15TH	2.71		6.15	15TH	2.42
6.96	20TH	2.74		6.22	20TH	2.45
7.02	25TH	2.77		6.28	25TH	2.47
7.08	30TH	2.79		6.33	30TH	2.49
7.14	35TH	2.81		6.38	35TH	2.51
7.20	40TH	2.83		6.43	40TH	2.53
7.25	45TH	2.85		6.47	45TH	2.55
7.30	50TH	2.87		6.52	50TH	2.57
7.36	55TH	2.90		6.56	55TH	2.58
7.41	60TH	2.92		6.61	60TH	2.60
7.47	65TH	2.94		6.65	65TH	2.62
7.53	70TH	2.96		6.70	70TH	2.64
7.59	75TH	2.99		6.76	75TH	2.66
7.66	80TH	3.02		6.82	80TH	2.68
7.74	85TH	3.05		6.89	85TH	2.71
7.84	90TH	3.09		6.97	90TH	2.75
7.98	95TH	3.14		7.10	95TH	2.80
8.06	97TH	3.17		7.18	97TH	2.83
8.12	98TH	3.20		7.24	98TH	2.85
8.20	99TH	3.23		7.33	99TH	2.89

FEMALE DATA

* * * * *

PERCENTILES

* * * * *

THE SUMMARY STATISTICS

CENTIMETERS		INCHES		CENTIMETERS		INCHES
7.31	MEAN	2.88		6.52	MEAN	2.57
.02	SE(M)	.01		.02	SE(M)	.01
.40	ST DEV	.16		.35	ST DEV	.14
.02	SE(SD)	.01		.01	SE(SD)	.00

* * * * *

COEFF. OF VARIATION	5.5%		COEFF. OF VARIATION	5.4%
SYMMETRY----VETA I	.06		SYMMETRY----VETA I	.00
KURTOSIS----VETA II	-.21		KURTOSIS----VETA II	-.09

* * * * *   * * * *

NUMBER OF SUBJECTS   293   NUMBER OF SUBJECTS   491

33. 1st-3rd Toe Breadth

Landmark: None

Instrument: Anthropometer configured as a beam caliper

Position of Subject: Subject stands erect, feet slightly apart, and weight distributed equally on both feet.

Procedure: With a beam caliper perpendicular to the long axis of the foot, measure the maximum breadth from the medial border of the 1st (great) toe to the lateral border of the 3rd toe.
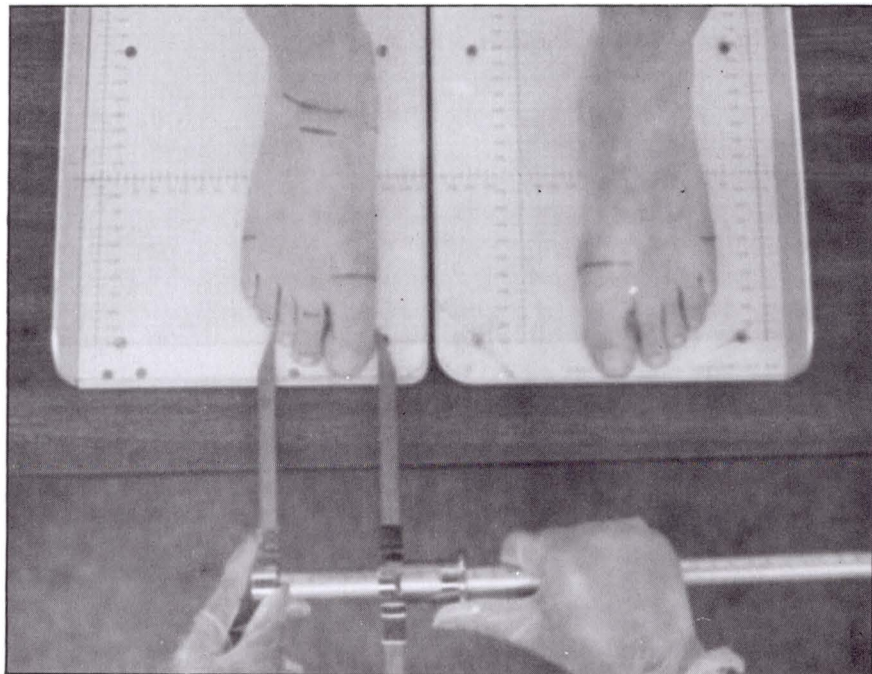
VARIABLE NO. 33--1ST-3RD TOE BRDTH   MALE DATA

-- INTERVALS --		ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
5.45 -	5.54	1	1	.34	.34
5.55 -	5.64	0	1	.00	.34
5.65 -	5.74	0	1	.00	.34
5.75 -	5.84	1	2	.34	.68
5.85 -	5.94	2	4	.68	1.37
5.95 -	6.04	1	5	.34	1.71
6.05 -	6.14	2	7	.68	2.39
6.15 -	6.24	4	11	1.37	3.75
6.25 -	6.34	4	15	1.37	5.12
6.35 -	6.44	4	19	1.37	6.48
6.45 -	6.54	8	27	2.73	9.22
6.55 -	6.64	19	46	6.48	15.70
6.65 -	6.74	15	61	5.12	20.82
6.75 -	6.84	23	84	7.85	28.67
6.85 -	6.94	12	96	4.10	32.76
6.95 -	7.04	17	113	5.80	38.57
7.05 -	7.14	23	136	7.85	46.42
7.15 -	7.24	20	156	6.83	53.24
7.25 -	7.34	23	179	7.85	61.09
7.35 -	7.44	28	207	9.56	70.65
7.45 -	7.54	10	217	3.41	74.06
7.55 -	7.64	21	238	7.17	81.23
7.65 -	7.74	15	253	5.12	86.35
7.75 -	7.84	11	264	3.75	90.10
7.85 -	7.94	7	271	2.39	92.49
7.95 -	8.04	6	277	2.05	94.54
8.05 -	8.14	0	277	.00	94.54
8.15 -	8.24	6	283	2.05	96.59
8.25 -	8.34	5	288	1.71	98.29
8.35 -	8.44	4	292	1.37	99.66
8.45 -	8.54	0	292	.00	99.66
8.55 -	8.64	0	292	.00	99.66
8.65 -	8.74	0	292	.00	99.66
8.75 -	8.84	1	293	.34	100.00

VARIABLE NO. 33--1ST-3RD TOE BRDTH   FEMALE DATA

-- INTERVALS --		ACTUAL FREQ.	CUM.- FREQ.	PCT.- FREQ.	CUM.- PCT.-FQ.
5.25 -	5.34	1	1	.20	.20
5.35 -	5.44	3	4	.61	.81
5.45 -	5.54	5	9	1.02	1.83
5.55 -	5.64	8	17	1.63	3.46
5.65 -	5.74	7	24	1.43	4.89
5.75 -	5.84	19	43	3.87	8.76
5.85 -	5.94	20	63	4.07	12.83
5.95 -	6.04	31	94	6.31	19.14
6.05 -	6.14	33	127	6.72	25.87
6.15 -	6.24	40	167	8.15	34.01
6.25 -	6.34	39	206	7.94	41.96
6.35 -	6.44	42	248	8.55	50.51
6.45 -	6.54	36	284	7.33	57.84
6.55 -	6.64	49	333	9.98	67.82
6.65 -	6.74	46	379	9.37	77.19
6.75 -	6.84	45	424	9.16	86.35
6.85 -	6.94	16	440	3.26	89.61
6.95 -	7.04	19	459	3.87	93.48
7.05 -	7.14	5	464	1.02	94.50
7.15 -	7.24	16	480	3.26	97.76
7.25 -	7.34	3	483	.61	98.37
7.35 -	7.44	3	486	.61	98.98
7.45 -	7.54	1	487	.20	99.19
7.55 -	7.64	0	487	.00	99.19
7.65 -	7.74	1	488	.20	99.39
7.75 -	7.84	1	489	.20	99.59
7.85 -	7.94	2	491	.41	100.00

VARIABLE NO. 33--1ST-3RD TOE BRDTH

MALE DATA				FEMALE DATA		
* * * * *				* * * * *		

PERCENTILES				PERCENTILES		
CENTIMETERS		INCHES		CENTIMETERS		INCHES
5.89	1ST	2.32		5.47	1ST	2.15
6.09	2ND	2.40		5.56	2ND	2.19
6.20	3RD	2.44		5.63	3RD	2.22
6.34	5TH	2.50		5.72	5TH	2.25
6.53	10TH	2.57		5.88	10TH	2.31
6.66	15TH	2.62		5.99	15TH	2.36
6.75	20TH	2.66		6.07	20TH	2.39
6.83	25TH	2.69		6.15	25TH	2.42
6.91	30TH	2.72		6.21	30TH	2.45
6.98	35TH	2.75		6.27	35TH	2.47
7.05	40TH	2.77		6.33	40TH	2.49
7.11	45TH	2.80		6.39	45TH	2.51
7.18	50TH	2.83		6.44	50TH	2.54
7.25	55TH	2.85		6.50	55TH	2.56
7.32	60TH	2.88		6.55	60TH	2.58
7.39	65TH	2.91		6.60	65TH	2.60
7.47	70TH	2.94		6.66	70TH	2.62
7.55	75TH	2.97		6.72	75TH	2.65
7.65	80TH	3.01		6.79	80TH	2.67
7.77	85TH	3.06		6.87	85TH	2.71
7.91	90TH	3.11		6.97	90TH	2.74
8.11	95TH	3.19		7.13	95TH	2.81
8.24	97TH	3.24		7.23	97TH	2.85
8.32	98TH	3.28		7.31	98TH	2.88
8.43	99TH	3.32		7.45	99TH	2.93

* * * * *

THE SUMMARY STATISTICS				THE SUMMARY STATISTICS		
CENTIMETERS		INCHES		CENTIMETERS		INCHES
7.19	MEAN	2.83		6.44	MEAN	2.53
.03	SE(M)	.01		.02	SE(M)	.01
.53	ST DEV	.21		.43	ST DEV	.17
.02	SE(SD)	.01		.01	SE(SD)	.01

* * * * *

COEFF. OF VARIATION	7.4%		COEFF. OF VARIATION	6.6%
SYMMETRY----VETA I	.02		SYMMETRY----VETA I	.12
KURTOSIS----VETA II	.08		KURTOSIS----VETA II	.17

* * * * *

NUMBER OF SUBJECTS	293		NUMBER OF SUBJECTS	491

166

Chapter IV

BIVARIATE RELATIONSHIPS IN THE DATA

In the previous chapter each measurement was presented individually, that is, independently of one another. While the univariate summary statistics are essential to any anthropometric study, they do not reveal information about the interrelationships among specific pairs of variables. Within the realm of anthropometry, the statistical relationships that exist between pairs of variables, the bivariate relationships, are of extreme importance because they are crucial to the design of clothing and personal equipment and because they can be applied to a variety of ergonomic problems.

The purpose of this chapter is to present three useful ways in which bivariate relationships may be expressed. Specifically, these are bivariate frequency tables, correlation coefficients, and simple regression equations. In the following text it will be seen that the three are intimately tied to one another.

Bivariate Frequency Tables

A bivariate frequency table specifies the simultaneous distribution of individuals within uniform size categories of two variables. For example, consider the relationship between Foot Length and BOF Length among males in this study (see Table 22). Of the 290 males with information for both variables, 19 (6.6% of the total) fall within a bivariate size category of 26.0 – 26.4 cm for Foot Length and 19.0 – 19.4 cm for BOF Length, 20 (6.9%) fall within a size category 26.5 – 26.9 for Foot Length and 20.0 – 20.4 for BOF Length, and so on. In this manner all individuals are subsumed within a specific number of categories depending on the range of each variable and the increment size established for each variable.

In this report 37 bivariate tables per gender (74 total) are presented. Since the original variable count numbers 33, exactly 528 nonrepetitive bivariate combinations per gender (1056 total) would have been theoretically possible. However, this ponderous number of tables would include many bivariate combinations that have little or no intrinsic value for the design and sizing of footwear. The usefulness of a bivariate combination in the design and sizing of footwear and the applicability of a bivariate combination to biological interest were both used as selection criteria to determine which tables were to be included in this report.

The bivariate frequency tables presented in this section were initially generated by the Crosstabs procedure of SPSS (Nie et al., 1975), and then were modified to their present form. The general configuration of the tables is a matrix with uniform size increments encompassing the range of a variable across the top of the table (columns), and uniform size increments encompassing the range of another variable down the left margin of the table (rows). The column increments are in ascending order from left to right, and

the row increments are in descending order from top to bottom. All variable increments are given in centimeters except for Weight which is presented in kilograms. The increment size for the variables was set at either 0.2 cm, 0.5 cm, or 1.0 cm depending on the relative magnitude and the range of the measurement. The increment size for Stature among males and females is 2.0 cm. The increment sizes for male and female Weight are 3.0 kg and 2.5 kg, respectively. By using these increments the number of size categories for any particular variable does not exceed 20 nor fall below 11. As with the univariate frequency data, the increments are to be read as the first value through the second value.

Within the demarcated cells formed by the union of the columns and rows are the actual frequency counts and the corresponding percentages of the total number of individuals for each count. Column and row totals with percentages of the total are located at the bottom and right margins, respectively. The grand total of individuals is located in the lower right corner. All frequencies and percentages are presented in "piggyback" fashion with the counts over the percentages.

One other noticeable feature of the tables that requires mention is the sequential numbering of the increments (above the column increments and below the row increments). The numbers serve to alert the reader to missing increments. The missing increments occur because the Crosstabs procedure of SPSS (Nie et al. 1975) is designed to omit from printing any column or row labels which have no individuals falling within that particular size increment. This is clearly illustrated again in Table 22 where the distribution for Foot Length (VAR 25), the row variable, skips increments from 1 to 5. This feature should be borne in mind when reading the tables.

As is evident, all tables are placed in broad aspect on the page. To accomplish this, it was necessary to utilize the variable with the greater number of increments as the column variable. This was done for the majority of the tables except in a few cases where the number of increments for the row variable exceeded that of the column variable by only one or two increments. Finally, in following the general pattern used throughout this report, the bivariate tables for males (Tables 11 to 47) are presented before those for females (Tables 48 to 84).

Table 11. Male Bivariate Table of Ankle Circumference (VAR 13) and Weight (VAR 21)

VAR21 column headers (VAR13 = rows, values shown as count / percent):

	1 51.0-53.9	2 54.0-56.9	3 57.0-59.9	4 60.0-62.9	5 63.0-65.9	6 66.0-68.9	7 69.0-71.9	8 72.0-74.9	9 75.0-77.9	10 78.0-80.9	11 81.0-83.9	12 84.0-86.9	13 87.0-89.9	14 90.0-92.9	15 93.0-95.9	16 96.0-98.9	17 99.0-101.9	18 102.0-104.9	19 105.0-107.9	20 108.0-110.9	ROW TOTAL
17 26.5-26.9																		1 .3			1 .3
16 26.0-26.4											1 .3		1 .3								2 .7
15 25.5-25.9														1 .3		1 .3					2 .7
14 25.0-25.4												1 .3	1 .3	2 .7	1 .3	1 .3					6 2.1
13 24.5-24.9							1 .3		1 .3	1 .3	2 .7	2 .7	1 .3	2 .7	1 .3			1 .3	1 .3		13 4.5
12 24.0-24.4							2 .7			1 .3	4 1.4	4 1.4	4 1.4	4 1.4	2 .7		1 .3				22 7.6
11 23.5-23.9							2 .7	1 .3	3 1.0	4 1.4	3 1.0	3 1.0	1 .3	2 .7		1 .3	1 .3	1 .3		1 .3	23 7.9
10 23.0-23.4						2 .7	3 1.0		4 1.4	4 1.4	2 .7	7 2.4	4 1.4	1 .3	2 .7						29 10.0
9 22.5-22.9				1 .3	2 .7	2 .7	3 1.0	2 .7	6 2.1	3 1.0	4 1.4		2 .7	2 .7	1 .3	1 .3	1 .3				30 10.3
8 22.0-22.4				1 .3	6 2.1	8 2.7	4 1.4	6 2.1	5 1.7	4 1.4	3 1.0	3 1.0	2 .7	2 .7							44 15.1
7 21.5-21.9		1 .3	1 .3	1 .3	9 3.1	6 2.1	7 2.4	4 1.4	5 1.7	1 .3	3 1.0	1 .3	1 .3			2 .7					42 14.4
6 21.0-21.4			3 1.0	5 1.7	4 1.4	6 2.1	6 2.1	3 1.0	2 .7	1 .3		1 .3	2 .7								33 11.3
5 20.5-20.9		2 .7	3 1.0	8 2.7	7 2.4	1 .3	1 .3		2 .7						1 .3						25 8.6
4 20.0-20.4	1 .3	1 .3	1 .3	5 1.7	4 1.4	2 .7															14 4.8
3 19.5-19.9				1 .3			1 .3														2 .7
2 19.0-19.4	1 .3			1 .3																	2 .7
1 18.5-18.9			1 .3																		1 .3
COLUMN TOTAL	2 .7	4 1.4	9 3.1	23 7.9	34 11.7	28 9.6	27 9.3	20 6.9	28 9.6	17 5.8	27 9.3	19 6.5	16 5.5	18 6.2	5 1.7	6 2.1	3 1.0	3 1.0	1 .3	1 .3	291 100.0

169

VAR25

VAR13	19.0–19.4 (1)	20.0–20.4 (3)	20.5–20.9 (4)	21.0–21.4 (5)	21.5–21.9 (6)	22.0–22.4 (7)	22.5–22.9 (8)	23.0–23.4 (9)	23.5–23.9 (10)	24.0–24.4 (11)	24.5–24.9 (12)	25.0–25.4 (13)	25.5–25.9 (14)	26.0–26.4 (15)	26.5–26.9 (16)	27.0–27.4 (17)	27.5–27.9 (18)	28.5–28.9 (20)	ROW TOTAL
17 / 25.0-25.4															1 / .2				1 / .2
15 / 24.0-24.4										.2					1 / .2				2 / .4
14 / 23.5-23.9										1 / .2	1 / .2	1 / .2					1 / .2		4 / .8
13 / 23.0-23.4							1 / .2				2 / .4		1 / .2	1 / .2			1 / .2	1 / .2	7 / 1.4
12 / 22.5-22.9								1 / .2		4 / .8	4 / .8		2 / .4	3 / .6	1 / .2				19 / 3.9
11 / 22.0-22.4								1 / .2	4 / .8	1 / .2	3 / .6	4 / .8	7 / 1.4	8 / 1.6	3 / .6	3 / .6	4 / .8		38 / 7.8
10 / 21.5-21.9						2 / .4	2 / .4	8 / 1.6	11 / 2.2	14 / 2.9	11 / 2.2	7 / 1.4	4 / .8	6 / 1.2	3 / .6	1 / .2	1 / .2		70 / 14.3
9 / 21.0-21.4					1 / .2	3 / .6	6 / 1.2	6 / 1.2	13 / 2.7	10 / 2.0	8 / 1.6	23 / 4.7	8 / 1.6	6 / 1.2	5 / 1.0	1 / .2	2 / .4		92 / 18.8
8 / 20.5-20.9					1 / .2	2 / .4	5 / 1.0	9 / 1.3	7 / 1.4	5 / 1.0	15 / 3.1	9 / 1.8	12 / 2.5	4 / .8	3 / .6	1 / .2			73 / 14.9
7 / 20.0-20.4					1 / .2	5 / 1.0	9 / 1.8	6 / 1.2	14 / 2.9	16 / 3.3	11 / 2.2	11 / 2.2	1 / .2	4 / .8	3 / .6				81 / 15.6
6 / 19.5-19.9		1 / .2			3 / .6	1 / .2	1 / .2	7 / 1.4	10 / 2.0	13 / 2.7	2 / .4	3 / .6	7 / 1.4						48 / 9.8
5 / 19.0-19.4					2 / .4	4 / .8	3 / .6	6 / 1.2	5 / 1.0	5 / 1.0	7 / 1.4		1 / .2		1 / .2				34 / 7.0
4 / 18.5-18.9	1 / .2		1 / .2		1 / .2		3 / .6	2 / .4	2 / .4	2 / .4	3 / .6	1 / .2							16 / 3.3
3 / 18.0-18.4					1 / .2								1 / .2						2 / .4
2 / 17.5-17.9															1 / .2				1 / .2
1 / 17.0-17.4				1 / .2															1 / .2
COLUMN TOTAL	1 / .2	1 / .2	1 / .2	1 / .2	10 / 2.0	17 / 3.5	31 / 6.3	49 / 10.0	67 / 13.7	76 / 15.5	62 / 12.7	68 / 13.9	46 / 9.4	27 / 5.5	19 / 3.9	8 / 1.6	4 / .8	1 / .2	489 / 100.0

Table 12. Male Bivariate Table of Ankle Circumference (VAR 13) and Foot Length, Right (VAR 25)

171

VAR25

VAR26	21.5- 2:.7	23.5- 23.3	24.0- 24.4	24.5- 24.9	25.0- 25.4	25.5- 25.9	26.0- 26.4	26.5 26.9	27.0- 27.4	27.5- 27.3	28.0- 28.4	29.5- 28.9	29.3- 29.4	29.5- 29.3	30.0- 30.4	ROW TOTAL
	1	2	5	6	7	8	9	1C	11	12	13	14	15	16	18	
17 1:.3 ::.7												.3				1 .3
15 11.4-11.5													.3	.3		2 .7
14 11.2-11.3									1 .3	1 .3	1 .3	2 .7	1 .3			6 2.1
13 11.0-11.1									2 .7	1 .3	2 .7	3 1.0	2 .7	1 .3	2 .7	13 4.5
12 10.8-10.9						1 .3		1 .3			3 1.0	2 .7	2 .7	2 .7	1 .3	12 4.1
11 10.6-10.7				1 .3			2 .7	2 .7	2 .7	3 1.0	5 1.7	1 .3	2 .7	1 .3		19 6.5
10 10.4-10.5					3 1.0	1 .3	4 1.4	3 1.0	6 2.1	4 1.4	10 3.4	5 1.7	3 1.0	3 1.0		42 14.4
9 10.2-10.3		1 .3		1 .3	2 .7	2 .7	2 .7	7 2.4	6 2.1	3 1.0	7 2.4	1 .3	2 .7			34 11.7
8 10.0-10.1					3 1.0	1 .3	7 2.4	10 3.4	8 2.7	11 3.8	3 1.0	5 1.7	1 .3		1 .3	50 17.2
7 9.8-9.9		1 .3					2 .7	5 1.7	7 2.4	5 1.7	3 1.0	4 1.4				27 9.3
6 9.6-9.7				2 .7	2 .7	4 1.4	2 .7	6 2.1	8 2.7	10 3.4	1 .3					35 12.0
5 9.4-9.5				1 .3	1 .3	7 2.4	5 1.7	1 .3	4 1.4	3 1.0	3 1.0		2 .7			27 9.3
4 9.2-9.3		1 .3			2 .7	1 .3	4 1.4	2 .7	2 .7							12 4.1
3 9.0-9.1				2 .7	2 .7		2		1 .3	2 .7						9 3.1
1 8.6-8.7						2 .7										2 .7
COLUMN TOTAL	1 .3	2 .7	5 1.7	12 4.1	20 6.9	26 8.9	32 11.0	43 14.8	48 16.5	25 8.6	37 12.7	14 4.8	15 5.2	7 2.4	4 1.4	291 100.0

Table 13. Male Bivariate Table of BOF Breadth, Horiz, Right (VAR 26)
and Foot Length, Right (VAR 25)

Table header: VAR13 (columns), VAR16 (rows). Each cell shows count over percent.

VAR16	18.5-18.9 (1)	19.0-19.4 (2)	19.5-19.9 (3)	20.0-20.4 (4)	20.5-20.9 (5)	21.0-21.4 (6)	21.5-21.9 (7)	22.0-22.4 (8)	22.5-22.9 (9)	23.0-23.4 (10)	23.5-23.9 (11)	24.0-24.4 (12)	24.5-24.9 (13)	25.0-25.4 (14)	25.5-25.9 (15)	26.0-26.4 (16)	26.5-26.9 (17)	ROW TOTAL
14 / 28.5-28.9											1 / .3							1 / .3
13 / 28.0-28.4										1 / .3		1 / .3	1 / .3					3 / 1.0
12 / 27.5-27.9								3 / 1.0			2 / .7	3 / 1.0	1 / .3	2 / .7				11 / 3.8
11 / 27.0-27.4									3 / 1.0	1 / .3	2 / .7	2 / .7	1 / .3		1 / .3		1 / .3	11 / 3.8
10 / 26.5-26.9									2 / .7	5 / 1.7	6 / 2.1	3 / 1.0	3 / 1.0			1 / .3		20 / 6.9
9 / 26.0-26.4						2 / .7	2 / .7	5 / 1.7	6 / 2.1	7 / 2.4	6 / 2.1	3 / 1.0	5 / 1.7	2 / .7		1 / .3		39 / 13.4
8 / 25.5-25.9						2 / .7	4 / 1.4	11 / 3.8	4 / 1.4	3 / 1.0	3 / 1.0	4 / 1.4		1 / .3	1 / .3			33 / 11.3
7 / 25.0-25.4				1 / .3	2 / .7	4 / 1.4	8 / 2.7	7 / 2.4	2 / .7	2 / .7	2 / .7	4 / 1.4	1 / .3	1 / .3				34 / 11.7
6 / 24.5-24.9				1 / .3	8 / 2.7	8 / 2.7	11 / 3.8	9 / 3.1	6 / 2.1	7 / 2.4	1 / .3	1 / .3	1 / .3					53 / 18.2
5 / 24.0-24.4	1 / .3			2 / .7	8 / 2.7	5 / 1.7	9 / 3.1	3 / 1.0	7 / 2.4	1 / .3		1 / .3						37 / 12.7
4 / 23.5-23.9			1 / .3	5 / 1.7	3 / 1.0	7 / 2.4	7 / 2.4	4 / 1.4										27 / 9.3
3 / 23.0-23.4				3 / 1.0	3 / 1.0	5 / 1.7		1 / .3		1 / .3								13 / 4.5
2 / 22.5-22.9					2 / .7			1 / .3		1 / .3								4 / 1.4
1 / 22.0-22.4		2 / .7		2 / .7			1 / .3											5 / 1.7
COLUMN TOTAL	1 / .3	2 / .7	1 / .3	14 / 4.8	26 / 8.9	33 / 11.3	42 / 14.4	44 / 15.1	30 / 10.3	29 / 10.0	23 / 7.9	22 / 7.6	13 / 4.5	6 / 2.1	2 / .7	2 / .7	1 / .3	291 / 100.0

Table 14. Male Bivariate Table of BOF Circumference, Right (VAR 16) and Ankle Circumference (VAR 13)

VAR26

Table: Bivariate cross-tabulation of VAR16 (rows) × VAR26 (columns). Each cell shows count / row-or-cell percent.

VAR16	8.6–8.7 (1)	9.0–9.1 (3)	9.2–9.3 (4)	9.4–9.5 (5)	9.6–9.7 (6)	9.8–9.9 (7)	10.0–10.1 (8)	10.2–10.3 (9)	10.4–10.5 (10)	10.6–10.7 (11)	10.8–10.9 (12)	11.0–11.1 (13)	11.2–11.3 (14)	11.4–11.5 (15)	11.8–11.9 (17)	ROW TOTAL
14 / 28.5–28.9														1 / .3		1 / .3
13 / 28.0–28.4											1 / .3	1 / .3	1 / .3			3 / 1.0
12 / 27.5–27.9										1 / .3	1 / .3	5 / 1.7	2 / .7	2 / .7		11 / 3.8
11 / 27.0–27.4						1 / .3			3 / 1.0	1 / .3	2 / .7	3 / 1.0	1 / .3			11 / 3.8
10 / 26.5–26.9				1 / .3		1 / .3		1 / .3	9 / 3.1	5 / 1.7	3 / 1.0					20 / 6.9
9 / 26.0–26.4						1 / .3	3 / 1.0	6 / 2.1	15 / 5.2	6 / 2.1	5 / 1.7	2 / .7		1 / .3		39 / 13.4
8 / 25.5–25.9				1 / .3	1 / .3	2 / .7	6 / 2.1	10 / 3.4	7 / 2.4	3 / 1.0	2 / .7	1 / .3				33 / 11.4
7 / 25.0–25.4				2 / .7	2 / .7	4 / 1.4	15 / 5.2	4 / 1.4	6 / 2.1	1 / .3						34 / 11.7
6 / 24.5–24.9				4 / 1.4	11 / 3.8	8 / 2.8	18 / 6.2	10 / 3.4	2 / .7							53 / 18.3
5 / 24.0–24.4				10 / 3.4	11 / 3.8	7 / 2.4	5 / 1.7	3 / 1.0		1 / .3						37 / 12.8
4 / 23.5–23.9		4 / 1.4	4 / 1.4	4 / 1.4	8 / 2.8	4 / 1.4	2 / .7			1 / .3						27 / 9.3
3 / 23.0–23.4		1 / .3	5 / 1.7	5 / 1.7	1 / .3											12 / 4.1
2 / 22.5–22.9	1 / .3	2 / .7	1 / .3													4 / 1.4
1 / 22.0–22.4	1 / .3	2 / .7	2 / .7													5 / 1.7
COLUMN TOTAL	2 / .7	9 / 3.1	12 / 4.1	27 / 9.3	35 / 12.1	27 / 9.3	49 / 16.9	34 / 11.7	42 / 14.5	19 / 6.6	12 / 4.1	13 / 4.5	6 / 2.1	2 / .7	1 / .3	290 / 100.0

Table 15. Male Bivariate Table of BOF Circ, Right (VAR 16)
and BOF Breadth, Horiz, Right (VAR 26)

173

174

VAR25 — column categories (VAR25 value ranges and column numbers); VAR16 — row categories. Each cell shows count (upper) and percent (lower).

VAR16	21.5–21.9 (1)	23.5–23.9 (2)	24.0–24.4 (5)	24.5–24.9 (6)	25.0–25.4 (7)	25.6–25.9 (8)	26.0–26.4 (9)	26.5–26.9 (10)	27.0–27.4 (11)	27.5–27.9 (12)	28.0–28.4 (13)	28.5–28.9 (14)	29.0–29.4 (15)	29.5–29.9 (16)	30.0–30.4 (17)	ROW TOTAL
14 — 28.5–28.9														1 / .3		1 / .3
13 — 28.0–28.4										1 / .3				1 / .3	1 / .3	3 / 1.0
12 — 27.5–27.9										1 / .3	1 / .3	4 / 1.4	3 / 1.0	1 / .3	1 / .3	11 / 3.8
11 — 27.0–27.4										2 / .7	2 / .7	2 / .7	2 / .7	2 / .7	1 / .3	11 / 3.8
10 — 26.5–26.9								1 / .3		6 / 2.1	7 / 2.4	1 / .3	1 / .3	3 / 1.0	1 / .3	20 / 6.9
9 — 26.0–26.4						2 / .7	2 / .7	5 / 1.7	6 / 2.1	4 / 1.4	12 / 4.1	4 / 1.4	4 / 1.4			39 / 13.4
8 — 25.5–25.9				1 / .3	1 / .3	1 / .3	4 / 1.4	5 / 1.7	6 / 2.1	2 / .7	6 / 2.1	3 / 1.0	1 / .3	2 / .7	1 / .3	33 / 11.3
7 — 25.0–25.4			1 / .3	2 / .7	1 / .3	2 / .7	3 / 1.0	6 / 2.1	7 / 2.4	5 / 1.7	5 / 1.7		2 / .7			34 / 11.7
6 — 24.5–24.9	1 / .3			1 / .3	3 / 1.0	7 / 2.4	11 / 3.8	11 / 3.8	14 / 4.8	2 / .7	3 / 1.0					53 / 18.2
5 — 24.0–24.4				1 / .3	4 / 1.4	4 / 1.4	5 / 1.7	7 / 2.4	7 / 2.4	7 / 2.4	2 / .7					37 / 12.7
4 — 23.5–23.9		1 / .3	1 / .3		7 / 2.4	3 / 1.0	4 / 1.4	5 / 1.7	3 / 1.0	2 / .7	1 / .3					27 / 9.3
3 — 23.0–23.4		1 / .3	1 / .3	2 / .7	3 / 1.0	4 / 1.4			2 / .7							13 / 4.5
2 — 22.5–22.9				1 / .3	1 / .3	1 / .3			1 / .3							4 / 1.4
1 — 22.0–22.4			1 / .3	1 / .3	1 / .3	1 / .3	1 / .3									5 / 1.7
COLUMN TOTAL	1 / .3	2 / .7	5 / 1.7	12 / 4.1	21 / 7.2	26 / 8.9	32 / 11.0	43 / 14.8	47 / 16.2	25 / 8.6	37 / 12.7	14 / 4.8	15 / 5.2	7 / 2.4	4 / 1.4	291 / 100.0

Table 16. Male Bivariate Table of BOF Circumference, Right (VAR 16) and Foot Length, Right (VAR 25)

Table 17 is a bivariate cross-tabulation. Each cell shows the frequency count (upper) and percentage (lower).

VAR16	1 (22.0-22.4)	3 (23.0-23.4)	4 (23.5-23.9)	5 (24.0-24.4)	6 (24.5-24.9)	7 (25.0-25.4)	8 (25.5-25.9)	9 (26.0-26.4)	10 (26.5-26.9)	11 (27.0-27.4)	12 (27.5-27.9)	13 (28.0-28.4)	14 (28.5-28.9)	15 (29.0-29.4)	16 (29.5-29.9)	ROW TOTAL
14 (28.5-28.9)														1 / .3		1 / .3
13 (28.0-28.4)												1 / .3	1 / .3	1 / .3		3 / 1.0
12 (27.5-27.9)										1 / .3	2 / .7	3 / 1.0	5 / 1.7	1 / .3		12 / 4.1
11 (27.0-27.4)									1 / .3	4 / 1.4	1 / .3	2 / .7	1 / .3	2 / .7		11 / 3.8
10 (26.5-26.9)									5 / 1.7	1 / .3	6 / 2.1	4 / 1.4	3 / 1.0		1 / .3	20 / 6.9
9 (26.0-26.4)							4 / 1.4	4 / 1.4	8 / 2.8	10 / 3.4	8 / 2.8	3 / 1.0	1 / .3			38 / 13.1
8 (25.5-25.9)						1 / .3	4 / 1.4	8 / 2.8	11 / 3.8	5 / 1.7	4 / 1.4					33 / 11.4
7 (25.0-25.4)					1 / .3	4 / 1.4	5 / 1.7	13 / 4.5	6 / 2.1	2 / .7	3 / 1.0					34 / 11.7
6 (24.5-24.9)				1 / .3	3 / 1.0	10 / 3.4	19 / 6.6	13 / 4.5	7 / 2.4							53 / 18.3
5 (24.0-24.4)				6 / 2.1	4 / 1.4	17 / 5.9	4 / 1.4	5 / 1.7								36 / 12.4
4 (23.5-23.9)	1 / .3	1 / .3	1 / .3	4 / 1.4	6 / 2.1	9 / 3.1	5 / 1.7									27 / 9.3
3 (23.0-23.4)		1 / .3	2 / .7	6 / 2.1	1 / .3	3 / 1.0										13 / 4.5
2 (22.5-22.9)			1 / .3	1 / .3		1 / .3		1 / .3								4 / 1.4
1 (22.0-22.4)		1 / .3	3 / 1.0	1 / .3												5 / 1.7
COLUMN TOTAL	1 / .3	3 / 1.0	7 / 2.4	19 / 6.6	15 / 5.2	45 / 15.5	41 / 14.1	44 / 15.2	38 / 13.1	23 / 7.9	24 / 8.3	13 / 4.5	11 / 3.8	5 / 1.7	1 / .3	290 / 100.0

175

Table 17.   Male Bivariate Table of BOF Circumference, Right (VAR 16)
and Instep Circumference (VAR 15)

VAR21

VAR16	51.0–53.9 (1)	54.0–56.9 (2)	57.0–59.9 (3)	60.0–62.9 (4)	63.0–65.9 (5)	66.0–68.9 (6)	69.0–71.9 (7)	72.0–74.9 (8)	75.0–77.9 (9)	78.0–80.9 (10)	81.0–83.9 (11)	84.0–86.9 (12)	87.0–89.9 (13)	90.0–92.9 (14)	93.0–95.9 (15)	96.0–98.9 (16)	99.0–101.9 (17)	102.0–104.9 (18)	105.0–107.9 (19)	108.0–110.9 (20)	ROW TOTAL
14 / 28.5–28.9													1 / .3								1 / .3
13 / 28.0–28.4													1 / .3			1 / .3			1 / .3		3 / 1.0
12 / 27.5–27.9									1 / .3			2 / .7	2 / .7	2 / .7	2 / .7	2 / .7		1 / .3			12 / 4.1
11 / 27.0–27.4									1 / .3		2 / .7	1 / .3	2 / .7		3 / 1.0			1 / .3	1 / .3		11 / 3.8
10 / 26.5–26.9							1 / .3	1 / .3		1 / .3	1 / .3	4 / 1.4	3 / 1.0	4 / 1.4	1 / .3		1 / .3	1 / .3	1 / .3	1 / .3	20 / 6.9
9 / 26.0–26.4				1 / .3		4 / 1.4	5 / 1.7	3 / 1.0	3 / 1.0	3 / 1.0	6 / 2.1	2 / .7	2 / .7	5 / 1.7	2 / .7	2 / .7	1 / .3				39 / 13.4
8 / 25.5–25.9						1 / .3	3 / 1.0	3 / 1.0	3 / 1.0	5 / 1.7	2 / .7	3 / 1.0	4 / 1.4	3 / 1.0	4 / 1.4		2 / .7				33 / 11.3
7 / 25.0–25.4			1 / .3			4 / 1.4	5 / 1.7	5 / 1.7	3 / 1.0	3 / 1.0	4 / 1.4	6 / 2.1	1 / .3	2 / .7							34 / 11.7
6 / 24.5–24.9					5 / 1.7	10 / 3.4	5 / 1.7	7 / 2.4	4 / 1.4	8 / 2.7	4 / 1.4	5 / 1.7	1 / .3	2 / .7	1 / .3						52 / 17.9
5 / 24.0–24.4			1 / .3	5 / 1.7	5 / 1.7	11 / 3.8	3 / 1.0	3 / 1.0	2 / .7	4 / 1.4			1 / .3		2 / .7						37 / 12.7
4 / 23.5–23.9		1 / .3	2 / .7		5 / 1.7	4 / 1.4	5 / 1.7	2 / .7	3 / 1.0	4 / 1.4			1 / .3								27 / 9.3
3 / 23.0–23.4			1 / .3	3 / 1.0	3 / 1.0	3 / 1.0	1 / .3			1 / .3				1 / .3							13 / 4.5
2 / 22.5–22.9					2 / .7	1 / .3					1 / .3										4 / 1.4
1 / 22.0–22.4		1 / .3			2 / .7		1 / .3				1 / .3										5 / 1.7
COLUMN TOTAL	2 / .7	4 / 1.4	9 / 3.1	23 / 7.9	34 / 11.7	28 / 9.6	26 / 8.9	20 / 6.9	28 / 9.6	17 / 5.8	27 / 9.3	19 / 6.5	16 / 5.5	18 / 6.2	5 / 1.7	7 / 2.4	3 / 1.0	3 / 1.0	1 / .3	1 / .3	291 / 100.0

Table 18.   Male Bivariate Table of BOF Circumference, Right (VAR 16) and Weight (VAR 21)

VAR13

VAR24	18.5-18.9 (1)	19.0-19.4 (2)	19.5-19.9 (3)	20.0-20.4 (4)	20.5-20.9 (5)	21.0-21.4 (6)	21.5-21.9 (7)	22.0-22.4 (8)	22.5-22.9 (9)	23.0-23.4 (10)	23.5-23.9 (11)	24.0-24.4 (12)	24.5-24.9 (13)	25.0-25.4 (14)	25.5-25.9 (15)	26.0-26.4 (16)	26.5-26.9 (17)	ROW TOTAL
11 22.0-22.4									2 .7	1 .3	3 1.0	1 .3						7 2.4
10 21.5-21.9								1 .3	1 .3		2 .7	2 .7	2 .7	1 .3		1 .3		10 3.4
9 21.0-21.4						2 .7	1 .3	2 .7	1 .3	3 1.0	3 1.0	4 1.4	1 .3	1 .3				18 6.2
8 20.5-20.9					1 .3	1 .3	3 1.0	5 1.7	6 2.1	4 1.4	4 1.4	2 .7	4 1.4		1 .3			31 10.7
7 20.0-20.4			1 .3		2 .7	4 1.4	7 2.4	8 2.8	6 2.1	6 2.1	2 .7	5 1.7	2 .7	4 1.4	1 .3	1 .3		49 16.9
6 19.5-19.9				3 1.0	5 1.7	6 2.1	12 4.1	9 3.1	4 1.4	5 1.7	4 1.4	3 1.0	2 .7		1 .3			54 18.6
5 19.0-19.4	1 .3	1 .3		2 .7	5 1.7	5 1.7	4 1.4	10 3.4	3 1.0	8 2.8	4 1.4	3 1.0	1 .3					47 16.2
4 18.5-18.9		1 .3		4 1.4	6 2.1	4 1.4	8 2.8	4 1.4	4 1.4		1 .3	2 .7	1 .3					35 12.1
3 18.0-18.4			1 .3	4 1.4	3 1.0	4 1.4	5 1.7	3 1.0	3 1.0	1 .3								24 8.3
2 17.5-17.9				1 .3	2 .7	7 2.4	2 .7	2 .7										14 4.8
1 17.0-17.4					1 .3													1 .3
COLUMN TOTAL	1 .3	2 .7	2 .7	14 4.8	25 8.6	33 11.4	42 14.5	44 15.2	30 10.3	28 9.7	23 7.9	22 7.6	13 4.5	6 2.1	2 .7	2 .7	1 .3	290 100.0

Table 19.   Male Bivariate Table of BOF Length, Right (VAR 24)
and Ankle Circumference (VAR 13)

177

VAR26

VAR24	8.6-8.7 (1)	9.0-9.1 (3)	9.2-9.3 (4)	9.4-9.5 (5)	9.6-9.7 (6)	9.8-9.9 (7)	10.0-10.1 (8)	10.2-10.3 (9)	10.4-10.5 (10)	10.6-10.7 (11)	10.8-10.9 (12)	11.0-11.1 (13)	11.2-11.3 (14)	11.4-11.5 (15)	11.8-11.9 (17)	ROW TOTAL
11 22.0-22.4				1 .3			1 .3		2 .7	1 .3	1 .3	1 .3				7 2.4
10 21.5-21.9									2 .7	1 .3	1 .3	5 1.7		1 .3		10 3.5
9 21.0-21.4				1 .3			2 .7	3 1.0	5 1.7	3 1.0	3 1.0		1 .3		1 .3	19 6.6
8 20.5-20.9				2 .7	2 .7	3 1.0	3 1.0	6 2.1	6 2.1	3 1.0	2 .7	2 .7	2 .7			31 10.7
7 20.0-20.4				1 .3	2 .7	3 1.0	4 1.4	10 3.5	5 1.7	9 3.1	6 2.1	2 .7	3 1.0	2 .7	1 .3	48 16.5
6 19.5-19.9		2 .7			5 1.7	9 3.1	9 3.1	12 4.2	4 1.4	10 3.5	1 .3	1 .3	1 .3			54 18.7
5 19.0-19.4		1 .3	3 1.0		2 .7	9 3.1	7 2.4	9 3.1	10 3.5	3 1.0	1 .3		1 .3	1 .3		47 16.3
4 18.5-18.9	1 .3	1 .3		4 1.4	7 2.4	2 .7	3 1.0	5 1.7	4 1.4	3 1.0	3 1.0	2 .7				35 12.1
3 18.0-18.4	1 .3	2 .7		1 .3	4 1.4	6 2.1		7 2.4	1 .3	1 .3						23 8.0
2 17.5-17.9		3 1.0	3 1.0		2 .7	4 1.4		1 .3	1 .3							14 4.8
1 17.0-17.4							1 .3									1 .3
COLUMN TOTAL	2 .7	9 3.1	12 4.2	26 9.0	35 12.1	27 9.3	50 17.3	34 11.8	41 14.2	19 6.6	12 4.2	13 4.5	6 2.1	2 .7	1 .3	289 100.0

Table 20. Male Bivariate Table of BOF Length, Right (VAR 24) and BOF Breadth, Horizontal, Right (VAR 26)

```
                          VAR 16
                  I
                  I 122.0 -  22.5 -  23.0 -  23.5 -  24.0 -  24.5 -  25.0 -  25.5 -  26.0 -  26.5 -  27.0 -  27.5 -  28.0 -  28.5 -   ROW
                  I  22.4    22.9    23.4    23.9    24.4    24.9    25.4    25.9    26.4    26.9    27.4    27.9    28.4    28.9    TOTAL
          VAR24   I   1   I   2   I   3   I   4   I   5   I   6   I   7   I   8   I   9   I  10   I  11   I  12   I  13   I  14   I
       -----------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I
           11     I       I       I       I       I       I       I   1 I   2 I       I   2 I   1 I   1 I       I       I      7
        22.0-22.4 I       I       I       I       I       I       I  .3 I  .7 I       I  .7 I  .3 I  .3 I       I       I     2.4
        -----------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I
           10     I       I       I       I       I       I       I       I   1 I       I   2 I   2 I   4 I   1 I       I     10
        21.5-21.9 I       I       I       I       I       I       I       I  .3 I       I  .7 I  .7 I 1.4 I  .3 I       I     3.4
        -----------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I
            9     I       I       I       I   1 I       I       I   2 I   2 I   7 I   4 I       I   1 I   1 I   1 I     19
        21.0-21.4 I       I       I       I  .3 I       I       I  .7 I  .7 I 2.4 I 1.4 I       I  .3 I  .3 I  .3 I     6.6
        -----------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I
            8     I       I       I       I   1 I   2 I   3 I   2 I   7 I   7 I   5 I   2 I   2 I       I       I     31
        20.5-20.9 I       I       I       I  .3 I  .7 I 1.0 I  .7 I 2.4 I 2.4 I 1.7 I  .7 I  .7 I       I       I    10.7
        -----------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I
            7     I       I       I       I   1 I   3 I   7 I   8 I   5 I  13 I   5 I   3 I   3 I       I       I     48
        20.0-20.4 I       I       I       I  .3 I 1.0 I 2.4 I 2.8 I 1.7 I 4.5 I 1.7 I 1.0 I 1.0 I       I       I    16.6
        -----------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I
            6     I       I   1 I   2 I   3 I   8 I  15 I  11 I   6 I   3 I   2 I   2 I   1 I       I       I     54
        19.5-19.9 I       I  .  I  .7 I 1.0 I 2.8 I 5.2 I 3.8 I 2.1 I 1.0 I  .7 I  .7 I  .3 I       I       I    18.6
        -----------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I
            5     I   1 I       I       I   7 I   7 I  15 I   4 I   6 I   5 I       I   1 I       I   1 I       I     47
        19.0-19.4 I  .3 I       I       I 2.4 I 2.4 I 5.2 I 1.4 I 2.1 I 1.7 I       I  .3 I       I  .3 I       I    16.2
        -----------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I
            4     I   1 I   2 I   5 I   3 I   6 I   8 I   3 I   4 I   3 I       I       I       I       I       I     35
        18.5-18.9 I  .3 I  .7 I 1.7 I 1.0 I 2.1 I 2.8 I 1.0 I 1.4 I 1.0 I       I       I       I       I       I    12.1
        -----------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I
            3     I   2 I       I   3 I   7 I   6 I   4 I   2 I       I       I       I       I       I       I       I     24
        18.0-18.4 I  .7 I       I 1.0 I 2.4 I 2.1 I 1.4 I  .7 I       I       I       I       I       I       I       I     8.3
        -----------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I
            2     I   1 I   1 I   2 I   3 I   5 I   1 I   1 I       I       I       I       I       I       I       I     14
        17.5-17.9 I  .3 I  .3 I  .7 I 1.0 I 1.7 I  .3 I  .3 I       I       I       I       I       I       I       I     4.8
        -----------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I
            1     I       I       I       I   1 I       I       I       I       I       I       I       I       I       I       I      1
        17.0-17.4 I       I       I       I  .3 I       I       I       I       I       I       I       I       I       I       I      .3
        -----------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I
          COLUMN       5       4      12      27      37      53      34      33      38      20      11      12       3       1      290
          TOTAL      1.7     1.4     4.1     9.3    12.8    18.3    11.7    11.4    13.1     6.9     3.8     4.1     1.0      .3    100.0
```

Table 21.   Male Bivariate Table of BOF Length, Right (VAR 24)
and BOF Circumference, Right (VAR 16)

179

VAR25

VAR24	21.5-21.9 (1)	23.5-23.9 (5)	24.0-24.4 (6)	24.5-24.9 (7)	25.0-25.4 (8)	25.5-25.9 (9)	26.0-26.4 (10)	26.5-26.9 (11)	27.0-27.4 (12)	27.5-27.9 (13)	28.0-28.4 (14)	28.5-28.9 (15)	29.0-29.4 (16)	29.5-29.9 (17)	30.0-30.4 (18)	ROW TOTAL
11 / 22.0-22.4													2 / .7	2 / .7	3 / 1.0	7 / 2.4
10 / 21.5-21.9											2 / .7		5 / 1.7	2 / .7	1 / .3	10 / 3.4
9 / 21.0-21.4									1 / .3	1 / .3	4 / 1.4	3 / 1.0	7 / 2.4	3 / 1.0		19 / 6.6
8 / 20.5-20.9									3 / 1.0	9 / 3.1	14 / 4.8	5 / 1.7				31 / 10.7
7 / 20.0-20.4								3 / 1.0	16 / 5.5	11 / 3.8	11 / 3.8	6 / 2.1	1 / .3			48 / 16.6
6 / 19.5-19.9	1 / .3					1 / .3	3 / 1.0	20 / 6.9	19 / 6.6	4 / 1.4	6 / 2.1					54 / 18.6
5 / 19.0-19.4					1 / .3	2 / .7	19 / 6.6	17 / 5.9	8 / 2.8							47 / 16.2
4 / 18.5-18.9				1 / .3	7 / 2.4	15 / 5.2	9 / 3.1	2 / .7	1 / .3							35 / 12.1
3 / 18.0-18.4			1 / .3	4 / 1.4	13 / 4.5	5 / 1.7		1 / .3								24 / 8.3
2 / 17.5-17.9		1 / .3	3 / 1.0	7 / 2.4		3 / 1.0										14 / 4.8
1 / 17.0-17.4		1 / .3														1 / .3
COLUMN TOTAL	1 / .3	2 / .7	4 / 1.4	12 / 4.1	21 / 7.2	26 / 9.0	31 / 10.7	43 / 14.8	48 / 16.6	25 / 8.6	37 / 12.8	14 / 4.8	15 / 5.2	7 / 2.4	4 / 1.4	290 / 100.0

Table 22.   Male Bivariate Table of BOF Length, Right (VAR 24) and Foot Length, Right (VAR 25)

VAR17

Table values shown as count / percent.

VAR24	5.8-5.9 (1)	6.0-6.1 (2)	6.2-6.3 (3)	6.4-6.5 (4)	6.6-6.7 (5)	6.8-6.9 (6)	7.0-7.1 (7)	7.2-7.3 (8)	7.4-7.5 (9)	7.6-7.7 (10)	7.8-7.9 (11)	8.0-8.1 (12)	8.2-8.3 (13)	8.4-8.5 (14)	ROW TOTAL
11 / 22.0-22.4								2 / .7	1 / .3		2 / .7		1 / .3	1 / .3	7 / 2.4
10 / 21.5-21.9							2 / .7	2 / .7	3 / 1.0	1 / .3	1 / .3	1 / .3	1 / .3		10 / 3.4
9 / 21.0-21.4					1 / .3	2 / .7	4 / 1.4	5 / 1.7	2 / .7	2 / .7	2 / .7	1 / .3			19 / 6.5
8 / 20.5-20.9			1 / .3		2 / .7	1 / .3	7 / 2.4	10 / 3.4	8 / 2.7	1 / .3		1 / .3			31 / 10.7
7 / 20.0-20.4			1 / .3	1 / .3	5 / 1.7	5 / 1.7	14 / 4.8	12 / 4.1	8 / 2.7		2 / .7			1 / .3	49 / 16.8
6 / 19.5-19.9		2 / .7	1 / .3	4 / 1.4	5 / 1.7	7 / 2.4	18 / 6.2	6 / 2.1	5 / 1.7	5 / 1.7		1 / .3			54 / 18.6
5 / 19.0-19.4			2 / .7	6 / 2.1	10 / 3.4	8 / 2.7	8 / 2.7	7 / 2.4	3 / 1.0	2 / .7	1 / .3				47 / 16.2
4 / 18.5-18.9	1 / .3		3 / 1.0	7 / 2.4	7 / 2.4	8 / 2.7	5 / 1.7	2 / .7	1 / .3	1 / .3					35 / 12.0
3 / 18.0-18.4			2 / .7	7 / 2.4	8 / 2.7	1 / .3	3 / 1.0	3 / 1.0							24 / 8.2
2 / 17.5-17.9		1 / .3	2 / .7	1 / .3	4 / 1.4	3 / 1.0	2 / .7		1 / .3						14 / 4.8
1 / 17.0-17.4							1 / .3								1 / .3
COLUMN TOTAL	1 / .3	3 / 1.0	12 / 4.1	26 / 8.9	42 / 14.4	35 / 12.0	64 / 22.0	47 / 16.2	31 / 10.7	14 / 4.8	8 / 2.7	4 / 1.4	2 / .7	2 / .7	291 / 100.0

Table 23.   Male Bivariate Table of BOF Length, Right (VAR 24) and Heel Breadth, Right   (VAR 17)

VAR 15

VAR 24	22.0-22.4 (1)	23.0-23.4 (3)	23.5-23.9 (4)	24.0-24.4 (5)	24.5-24.9 (6)	25.0-25.4 (7)	25.5-25.9 (8)	26.0-26.4 (9)	26.5-26.9 (10)	27.0-27.4 (11)	27.5-27.9 (12)	28.0-28.4 (13)	28.5-28.9 (14)	29.0-29.4 (15)	29.5-29.9 (16)	ROW TOTAL
11 / 22.0-22.4										1 / .3	3 / 1.0	1 / .3	1 / .3	1 / .3		7 / 2.4
10 / 21.5-21.9										2 / .7	3 / 1.0	2 / .7	2 / .7	1 / .3		10 / 3.5
9 / 21.0-21.4							4 / 1.4	1 / .3		5 / 1.7	2 / .7	2 / .7	3 / 1.0	1 / .3	1 / .3	19 / 6.6
8 / 20.5-20.9						3 / 1.0	2 / .7	2 / .7	9 / 3.1	3 / 1.0	7 / 2.4	4 / 1.4	1 / .3			31 / 10.7
7 / 20.0-20.4					2 / .7	6 / 2.1	3 / 1.0	11 / 3.8	9 / 3.1	7 / 2.4	5 / 1.7	3 / 1.0	3 / 1.0			49 / 17.0
6 / 19.5-19.9				2 / .7	2 / .7	7 / 2.4	12 / 4.2	16 / 5.5	9 / 3.1	1 / .3	2 / .7	1 / .3	1 / .3	1 / .3		53 / 18.7
5 / 19.0-19.4		1 / .3		1 / .3	4 / 1.4	10 / 3.5	11 / 3.8	7 / 2.4	8 / 2.8	3 / 1.0	1 / .3			1 / .3		47 / 16.3
4 / 18.5-18.9	1 / .3	1 / .3	2 / .7	7 / 2.4	3 / 1.0	6 / 2.1	6 / 2.1	4 / 1.4	3 / 1.0		1 / .3					34 / 11.8
3 / 18.0-18.4			1 / .3	6 / 2.1	3 / 1.0	9 / 3.1	1 / .3	3 / 1.0								23 / 8.0
2 / 17.5-17.9			4 / 1.4	3 / 1.0	1 / .3	4 / 1.4	2 / .7									14 / 4.8
1 / 17.0-17.4					1 / .3											1 / .3
COLUMN TOTAL	1 / .3	2 / .7	7 / 2.4	19 / 6.6	16 / 5.5	45 / 15.6	41 / 14.2	44 / 15.2	38 / 13.1	22 / 7.6	24 / 8.3	13 / 4.5	11 / 3.8	5 / 1.7	1 / .3	283 / 100.0

Table 24. Male Bivariate Table of BOF Length, Right (VAR 24) and Instep Circumference (VAR 15)

182

VAR24 \ VAR1	156.4-158.3 (1)	158.4-160.3 (2)	160.4-162.3 (3)	162.4-164.3 (4)	164.4-166.3 (5)	166.4-168.3 (6)	168.4-170.3 (7)	170.4-172.3 (8)	172.4-174.3 (9)	174.4-176.3 (10)	176.4-178.3 (11)	178.4-180.3 (12)	180.4-182.3 (13)	182.4-184.3 (14)	184.4-186.3 (15)	186.4-188.3 (16)	188.4-190.3 (17)	190.4-192.3 (18)	192.4-194.3 (19)	ROW TOTAL
11 / 22.0-22.4											1 / .3		1 / .3			1 / .3	2 / .7	1 / .3	1 / .3	7 / 2.4
10 / 21.5-21.9									1 / .3	1 / .3		1 / .3	1 / .3	1 / .3	2 / .7		1 / .3	2 / .7		10 / 3.4
9 / 21.0-21.4								1 / .3		2 / .7	1 / .3	3 / 1.0	5 / 1.7	3 / 1.0	1 / .3		1 / .3	1 / .3	1 / .3	19 / 6.5
8 / 20.5-20.9							1 / .3		6 / 2.1		5 / 1.7	6 / 2.1	4 / 1.4	5 / 1.7	1 / .3	2 / .7	1 / .3			31 / 10.7
7 / 20.0-20.4					1 / .3	2 / .7	2 / .7	2 / .7	5 / 1.7	5 / 1.7	4 / 1.4	8 / 2.7	7 / 2.4	4 / 1.4	6 / 2.1	1 / .3			2 / .7	49 / 16.8
6 / 19.5-19.9				1 / .3	1 / .3	3 / 1.0	5 / 1.7	4 / 1.4	6 / 2.1	6 / 2.1	8 / 2.7	8 / 2.7	5 / 1.7	3 / 1.0	2 / .7		1 / .3	1 / .3		54 / 18.6
5 / 19.0-19.4				2 / .7		2 / .7	4 / 1.4	10 / 3.4	9 / 3.1	9 / 3.1	4 / 1.4	3 / 1.0	2 / .7	1 / .3	1 / .3					47 / 16.2
4 / 18.5-18.9		1 / .3		2 / .7	3 / 1.0	7 / 2.4	4 / 1.4	3 / 1.0	7 / 2.4	3 / 1.0	2 / .7	2 / .7		1 / .3						35 / 12.0
3 / 18.0-18.4	1 / .3		2 / .7	2 / .7	6 / 2.1	3 / 1.0	3 / 1.0	3 / 1.0	2 / .7					2 / .7						24 / 8.2
2 / 17.5-17.9				2 / .7	2 / .7	2 / .7	2 / .7	3 / 1.0	1 / .3	2 / .7										14 / 4.8
1 / 17.0-17.4		1 / .3																		1 / .3
COLUMN TOTAL	1 / .3	2 / .7	2 / .7	9 / 3.1	13 / 4.5	19 / 6.5	21 / 7.2	26 / 8.9	37 / 12.7	29 / 10.0	24 / 8.2	31 / 10.7	27 / 9.3	18 / 6.2	13 / 4.5	4 / 1.4	6 / 2.1	5 / 1.7	4 / 1.4	291 / 100.0

Table 25. Male Bivariate Table of BOF Length, Right (VAR 24) and Stature (VAR 1)

183

VAR12 \ VAR13	18.5-18.9 (1)	19.0-19.4 (2)	19.5-19.9 (3)	20.0-20.4 (4)	20.5-20.9 (5)	21.0-21.4 (6)	21.5-21.9 (7)	22.0-22.4 (8)	22.5-22.9 (9)	23.0-23.4 (10)	23.5-23.9 (11)	24.0-24.4 (12)	24.5-24.9 (13)	25.0-25.4 (14)	25.5-25.9 (15)	26.0-26.4 (16)	26.5-26.9 (17)	ROW TOTAL
14 (43.0-43.9)												1 / .3			1 / .3			2 / .7
13 (42.0-42.9)								1 / .3			1 / .3	2 / .7	3 / 1.0		1 / .3			8 / 2.7
12 (41.0-41.9)								1 / .3		1 / .3	2 / .7	2 / .7	2 / .7	2 / .7		1 / .3	1 / .3	12 / 4.1
11 (40.0-40.9)							1 / .3		2 / .7	3 / 1.0	4 / 1.4	7 / 2.4	4 / 1.4	1 / .3		1 / .3		23 / 7.9
10 (39.0-39.9)						1 / .3	1 / .3	1 / .3	4 / 1.4	6 / 2.1	5 / 1.7	2 / .7	1 / .3	2 / .7				23 / 7.9
9 (38.0-38.9)					1 / .3	3 / 1.0	4 / 1.4	7 / 2.4	4 / 1.4	4 / 1.4	7 / 2.4	4 / 1.4		1 / .3				35 / 12.0
8 (37.0-37.9)			1 / .3			2 / .7	5 / 1.7	4 / 1.4	6 / 2.1	8 / 2.7	1 / .3	4 / 1.4	3 / 1.0					34 / 11.7
7 (36.0-36.9)					4 / 1.4	7 / 2.4	8 / 2.7	12 / 4.1	11 / 3.8	4 / 1.4	3 / 1.0							49 / 16.8
6 (35.0-35.9)					3 / 1.0	8 / 2.7	12 / 4.1	12 / 4.1	2 / .7	3 / 1.0								40 / 13.7
5 (34.0-34.9)				2 / .7	7 / 2.4	8 / 2.7	7 / 2.4	4 / 1.4										28 / 9.6
4 (33.0-33.9)				4 / 1.4	5 / 1.7	2 / .7	3 / 1.0	1 / .3										15 / 5.2
3 (32.0-32.9)	1 / .3	1 / .3	1 / .3	5 / 1.7	3 / 1.0	2 / .7	1 / .3		1 / .3									15 / 5.2
2 (31.0-31.9)		1 / .3		2 / .7	2 / .7													5 / 1.7
1 (30.0-30.9)				1 / .3	1 / .3													2 / .7
COLUMN TOTAL	1 / .3	2 / .7	2 / .7	14 / 4.8	26 / 8.9	33 / 11.3	42 / 14.4	43 / 14.8	30 / 10.3	29 / 10.0	23 / 7.9	22 / 7.6	13 / 4.5	6 / 2.1	2 / .7	2 / .7	1 / .3	291 / 100.0

Table 26. Male Bivariate Table of Calf Circumference (VAR 12) and Ankle Circumference (VAR 13)

VAR2

VAR12	28.0-28.9 (1)	29.0-29.9 (2)	30.0-30.9 (3)	31.0-31.9 (4)	32.0-32.9 (5)	33.0-33.9 (6)	34.0-34.9 (7)	35.0-35.9 (8)	36.0-36.9 (9)	37.0-37.9 (10)	38.0-38.9 (11)	39.0-39.9 (12)	40.0-40.9 (13)	41.0-41.9 (14)	42.0-42.9 (15)	ROW TOTAL
14 43.0-43.9										1 .3	1 .3					2 .7
13 42.0-42.9					1 .3	2 .7	2 .7	2 .7	1 .3							8 2.7
12 41.0-41.9					3 1.0	3 1.0		3 1.0	2 .7			1 .3				12 4.1
11 40.0-40.9				1 .3	2 .7	6 2.1	9 3.1		4 1.4			1 .3	1 .3			24 8.2
10 39.0-39.9			1 .3	1 .3	3 1.0	2 .7	5 1.7	3 1.0	4 1.4	1 .3	2 .7			1 .3		23 7.9
9 38.0-38.9			2 .7	3 1.0	6 2.1	6 2.1	7 2.4	6 2.1	1 .3	3 1.0	1 .3					35 12.0
8 37.0-37.9		1 .3	2 .7	4 1.4	4 1.4	4 1.4	4 1.4	5 1.7	1 .3	3 1.0	5 1.7		1 .3			34 11.6
7 36.0-36.9	1 .3			5 1.7	4 1.4	3 1.0	3 1.0	13 4.5	7 2.4	7 2.4	1 .3	3 1.0		1 .3	1 .3	49 16.8
6 35.0-35.9	1 .3				3 1.0	13 4.5	5 1.7	8 2.7	6 2.1	2 .7		1 .3		1 .3		40 13.7
5 34.0-34.9					4 1.4	4 1.4	9 3.1	5 1.7	3 1.0	1 .3	1 .3		1 .3			28 9.6
4 33.0-33.9				3 1.0	1 .3	2 .7	1 .3	4 1.4	1 .3	3 1.0						15 5.1
3 32.0-32.9				1 .3	6 2.1	2 .7		4 1.4	1 .3	1 .3						15 5.1
2 31.0-31.9					1 .3	1 .3	2 .7		1 .3							5 1.7
1 30.0-30.9				1 .3					1 .3							2 .7
COLUMN TOTAL	2 .7	1 .3	14 4.8	28 9.6	44 15.1	42 14.4	63 21.6	38 13.0	29 9.9	10 3.4	12 4.1	3 1.0	3 1.0	2 .7	1 .3	292 100.0

185

Table 27.   Male Bivariate Table of Calf Circumference (VAR 12)
and Calf Height (VAR 2)

VAR12 \ VAR21	51.0-50.9 (1)	54.0-56.9 (2)	57.0-59.9 (3)	60.0-62.9 (4)	63.0-65.9 (5)	66.0-68.9 (6)	69.0-71.9 (7)	72.0-74.9 (8)	75.0-77.9 (9)	78.0-80.9 (10)	81.0-83.9 (11)	84.0-86.9 (12)	87.0-89.9 (13)	90.0-92.9 (14)	93.0-95.9 (15)	96.0-98.9 (16)	99.0-101.9 (17)	102.0-104.9 (18)	105.0-107.9 (19)	108.0-110.9 (20)	ROW TOTAL
14 / 43.0-43.9													1	1 /.3							2 / .7
13 / 42.0-42.9													5 /.3	1 /.7		.3			.3		8 / 2.7
12 / 41.0-41.9									.3		2 /.7	2 /.7	1 /.3	1 /.3	2 /.7	1 /.3	1 /.3	1 /.3	1 /.3		12 / 4.1
11 / 40.0-40.9							1 /.3		4 / 1.4	6 / 2.1	4 / 1.4	2 /.7	1.0	3 /.3	1 /.3	2 /.7				1 /.3	24 / 8.2
10 / 39.0-39.9						1 /.3	2 /.7		4 / 1.4	2 /.7	1 / 1.7	3 / 1.0	2 /.7		2 /.7	1 /.3	1 /.3				23 / 7.9
9 / 38.0-38.9					1 /.3	2 /.7	3 / 1.0		4 / 1.4	6 / 2.1	6 / 2.1	5 / 1.7	4 / 1.4	1 /.3	1 /.3	1 /.3	1 /.3				35 / 12.0
8 / 37.0-37.9					3 / 1.0	2 /.7	7 / 2.4	3 / 1.0	3 / 1.0	2 /.7	5 / 1.7	2 /.7	4 / 1.4	2 /.7	1 /.3						34 / 11.7
7 / 36.0-36.9				1 /.3	4 / 1.4	11 / 3.8	8 / 2.7	5 / 1.7	9 / 3.1	1 /.3	5 / 1.7	1 /.3		2 /.7			1 /.3				48 / 16.5
6 / 35.0-35.9			1 /.3	1 /.3	10 / 3.4	7 / 2.4	4 / 1.4	7 / 2.4	8 / 2.7		1 /.3			1 /.3							40 / 13.7
5 / 34.0-34.9		1 /.3	3 / 1.0	5 / 1.7	7 / 2.4	5 / 1.7	3 / 1.0	2 /.7	2 /.7												28 / 9.6
4 / 33.0-33.9		2 /.7	3 / 1.0	5 / 1.7	4 / 1.4	1 /.3															15 / 5.2
3 / 32.0-32.9	1 /.3		2 /.7	8 / 2.7	3 / 1.0		1 /.3														15 / 5.2
2 / 31.0-31.9	1 /.3				2 /.7	2 /.7															5 / 1.7
1 / 30.0-30.9		1 /.3			1 /.3																2 / .7
COLUMN TOTAL	2 /.7	4 / 1.4	9 / 3.1	23 / 7.9	34 / 11.7	28 / 9.6	27 / 9.3	19 / 6.5	28 / 9.6	17 / 5.8	27 / 9.3	19 / 6.5	16 / 5.5	18 / 6.2	5 / 1.7	7 / 2.4	3 / 1.0	3 / 1.0	1 /.3	1 /.3	291 / 100.0

Table 28.   Male Bivariate Table of Calf Circumference (VAR 12)
and Weight (VAR 21)

186

VAR1

VAR2	156.4–158.3 (1)	158.4–160.3 (2)	160.4–162.3 (3)	162.4–164.3 (4)	164.4–166.3 (5)	166.4–168.3 (6)	168.4–170.3 (7)	170.4–172.3 (8)	172.4–174.3 (9)	174.4–176.3 (10)	176.4–178.3 (11)	178.4–180.3 (12)	180.4–182.3 (13)	182.4–184.3 (14)	184.4–186.3 (15)	186.4–188.3 (16)	188.4–190.3 (17)	190.4–192.3 (18)	192.4–194.3 (19)	ROW TOTAL
15 42.0–42.9																		1 / .3		1 / .3
14 41.0–41.9													2 / .7							2 / .7
13 40.0–40.9														2 / .7			1 / .3			3 / 1.0
12 39.0–39.9															1 / .3	2 / .7				3 / 1.0
11 38.0–38.9											1 / .3		2 / .7	2 / .7		1 / .3	3 / 1.0		3 / 1.0	12 / 4.1
10 37.0–37.9									2 / .7	1 / .3	1 / .3			2 / .7	1 / .3		1 / .3	1 / .3	1 / .3	10 / 3.4
9 36.0–36.9							2 / .7	1 / .3	2 / .7	1 / .3	3 / 1.0	7 / 2.4	8 / 2.7	3 / 1.0	2 / .7			1 / .3		30 / 10.2
8 35.0–35.9				1 / .3	1 / .3		1 / .3	1 / .3	6 / 2.0	4 / 1.4	6 / 2.0	4 / 1.4	3 / 1.0	5 / 1.7	3 / 1.0	2 / .7	1 / .3			38 / 13.0
7 34.0–34.9				2 / .7			7 / 2.4	4 / 1.4	12 / 4.1	10 / 3.4	6 / 2.0	6 / 2.0	9 / 3.1	2 / .7	2 / .7	1 / .3		2 / .7		63 / 21.5
6 33.0–33.9				1 / .3	1 / .3	5 / 1.7	1 / .3	3 / 1.0	7 / 2.4	5 / 1.7	5 / 1.7	7 / 2.4	4 / 1.4	1 / .3	2 / .7					42 / 14.3
5 32.0–32.9					2 / .7	5 / 1.7	4 / 1.4	11 / 3.8	8 / 2.7	6 / 2.0	3 / 1.0	3 / 1.0	1 / .3		1 / .3					44 / 15.0
4 31.0–31.9			1 / .3	3 / 1.0	5 / 1.7	5 / 1.7	5 / 1.7	5 / 1.7	2 / .7	1 / .3		1 / .3								28 / 9.6
3 30.0–30.9		2 / .7	1 / .3	1 / .3	4 / 1.4	4 / 1.4	1 / .3	1 / .3												14 / 4.8
2 29.0–29.9				1 / .3																1 / .3
1 28.0–28.9	1 / .3		1 / .3																	2 / .7
COLUMN TOTAL	1 / .3	2 / .7	3 / 1.0	9 / 3.1	13 / 4.4	19 / 6.5	21 / 7.2	26 / 8.9	37 / 12.6	29 / 9.9	25 / 8.5	31 / 10.6	27 / 9.2	18 / 6.1	13 / 4.4	4 / 1.4	6 / 2.0	5 / 1.7	4 / 1.4	293 / 100.0

Table 29.   Male Bivariate Table of Calf Height (VAR 2)
and Stature (VAR 1)

187

Table 30. Male Bivariate Table of Heel Breadth, Right (VAR 17) and Ankle Circumference (VAR 13)

VAR 17 \ VAR 13	18.5–18.9 (1)	19.0–19.4 (2)	19.5–19.9 (3)	20.0–20.4 (4)	20.5–20.9 (5)	21.0–21.4 (6)	21.5–21.9 (7)	22.0–22.4 (8)	22.5–22.9 (9)	23.0–23.4 (10)	23.5–23.9 (11)	24.0–24.4 (12)	24.5–24.9 (13)	25.0–25.4 (14)	25.5–25.9 (15)	26.0–26.4 (16)	26.5–26.9 (17)	ROW TOTAL
14 / 8.4–9.5										1 / .3		1 / .3						2 / .7
13 / 8.2–8.3								1 / .3			1 / .3							2 / .7
12 / 8.0–8.1										1 / .3	1 / .3	2 / .7			•			4 / 1.4
11 / 7.8–7.9							1 / .3		2 / .7	2 / .7	1 / .3	2 / .7						8 / 2.7
10 / 7.6–7.7						2 / .7	1 / .3				4 / 1.4	2 / .7	3 / 1.0		1 / .3		1 / .3	14 / 4.8
9 / 7.4–7.5				1 / .3	3 / 1.0	1 / .3	4 / 1.4	1 / .3	7 / 2.4	3 / 1.0	4 / 1.4	4 / 1.4	1 / .3	2 / .7				31 / 10.5
8 / 7.2–7.3			1 / .3	1 / .3	2 / .7	4 / 1.4	7 / 2.4	9 / 3.1	2 / .7	5 / 1.7	1 / .3	7 / 2.4	5 / 1.7	1 / .3	1 / .3	1 / .3		47 / 16.1
7 / 7.0–7.1				3 / 1.0	10 / 3.4	7 / 2.4	12 / 4.1	8 / 2.7	9 / 3.1	7 / 2.4	1 / .3	4 / 1.4	2 / .7			1 / .3		64 / 21.9
6 / 6.8–6.9				3 / 1.0	2 / .7	5 / 1.7	7 / 2.4	9 / 3.1	2 / .7	2 / .7	2 / .7	2 / .7		1 / .3				35 / 12.0
5 / 6.6–6.7			1 / .3	2 / .7	5 / 1.7	6 / 2.1	7 / 2.4	6 / 2.1	7 / 2.4	6 / 2.1	1 / .3	1 / .3						42 / 14.4
4 / 6.4–6.5	1 / .3	2 / .7		4 / 1.4	6 / 2.1	3 / 1.0	4 / 1.4	4 / 1.4	2 / .7		1 / .3							27 / 9.2
3 / 6.2–6.3				2 / .7	4 / 1.4	2 / .7	2 / .7	2 / .7										12 / 4.1
2 / 6.0–6.1				1 / .3	1 / .3		1 / .3											3 / 1.0
1 / 5.8–5.9							1 / .3											1 / .3
COLUMN TOTAL	1 / .3	2 / .7	2 / .7	14 / 4.8	26 / 8.9	33 / 11.3	42 / 14.4	44 / 15.1	30 / 10.3	29 / 9.9	23 / 7.9	22 / 7.5	13 / 4.5	6 / 2.1	2 / .7	2 / .7	1 / .3	292 / 100.0

Table 30. Male Bivariate Table of Heel Breadth, Right (VAR 17) and Ankle Circumference (VAR 13)

VAR26

VAR17	8.6-8.7 (1)	9.0-9.1 (3)	9.2-9.3 (4)	9.4-9.5 (5)	9.6-9.7 (6)	9.8-9.9 (7)	10.0-10.1 (8)	10.2-10.3 (9)	10.4-10.5 (10)	10.6-10.7 (11)	10.8-10.9 (12)	11.0-11.1 (13)	11.2-11.3 (14)	11.4-11.5 (15)	11.8-11.9 (17)	ROW TOTAL
14 8.4-8.5				1 .3					1 .3							2 .7
13 8.2-8.3									1 .3					1 .3		2 .7
12 8.0-8.1									3 1.0				1 .3			4 1.4
11 7.8-7.9							2 .7	1 .3	1 .3			1 .3	2 .7	1 .3		8 2.7
10 7.6-7.7			1 .3			1 .3	2 .7	1 .3	4 1.4			2 .7	2 .7		1 .3	14 4.8
9 7.4-7.5		1 .3			3 1.0	4 1.4	6 2.1	4 1.4	5 1.7			3 1.0	3 1.0	1 .3	1 .3	31 10.7
8 7.2-7.3					7 2.4	3 1.0	9 3.1	6 2.1	8 2.7	8 2.7		3 1.0	3 1.0			47 16.2
7 7.0-7.1	1 .3	1 .3	2 .7	8 2.7	7 2.4	7 2.4	10 3.4	5 1.7	10 3.4	6 2.1	5 1.7	2 .7				64 22.0
6 6.8-6.9			2 .7	1 .3	7 2.4	3 1.0	8 2.7	5 1.7	4 1.4	4 1.4				1 .3		35 12.0
5 6.6-6.7		2 .7	3 1.0	6 2.1	5 1.7	2 .7	10 3.4	9 3.1	3 1.0	1 .3	1 .3					42 14.4
4 6.4-6.5		4 1.4	1 .3	6 2.1	2 .7	5 1.7	3 1.0	2 .7	3 1.0							26 8.9
3 6.2-6.3	1 .3			3 1.0	3 1.0	3 1.0	2 .7									12 4.1
2 6.0-6.1		2 .7			1 .3											3 1.0
1 5.8-5.9				1 .3												1 .3
COLUMN TOTAL	2 .7	9 3.1	12 4.1	27 9.3	35 12.0	27 9.3	50 17.2	34 11.7	42 14.4	19 6.5	12 4.1	13 4.5	6 2.1	2 .7	1 .3	291 100.0

Table 31. Male Bivariate Table of Heel Breadth, Right (VAR 17)
and BOF Breadth, Horiz, Right (VAR 26)

189

VAR16

VAR17	22.0-22.4 (1)	22.5-22.9 (2)	23.0-23.4 (3)	23.5-23.9 (4)	24.0-24.4 (5)	24.5-24.9 (6)	25.0-25.4 (7)	25.5-25.9 (8)	26.0-26.4 (9)	26.5-26.9 (10)	27.0-27.4 (11)	27.5-27.9 (12)	28.0-28.4 (13)	28.5-28.9 (14)	ROW TOTAL
14 / 8.4-8.5							1 / .3			1 / .3					2 / .7
13 / 8.2-8.3										1 / .3		1 / .3			2 / .7
12 / 8.0-8.1							1 / .3			1 / .3	1 / .3	1 / .3			4 / 1.4
11 / 7.8-7.9							1 / .3	2 / .7	1 / .3	2 / .7	1 / .3			1 / .3	8 / 2.7
10 / 7.6-7.7					1 / .3	1 / .3	1 / .3	2 / .7	4 / 1.4	1 / .3	2 / .7	2 / .7			14 / 4.8
9 / 7.4-7.5	1 / .3				2 / .7	9 / 3.1	2 / .7	2 / .7	6 / 2.1	2 / .7	3 / 1.0	2 / .7	2 / .7		31 / 10.6
8 / 7.2-7.3				1 / .3	4 / 1.4	10 / 3.4	5 / 1.7	9 / 3.1	7 / 2.4	4 / 1.4	2 / .7	3 / 1.0	1 / .3		46 / 15.8
7 / 7.0-7.1	1 / .3	2 / .7		6 / 2.1	10 / 3.4	10 / 3.4	6 / 2.1	9 / 3.1	12 / 4.1	6 / 2.1	1 / .3	2 / .7			65 / 22.3
6 / 6.8-6.9			2 / .7	3 / 1.0	2 / .7	11 / 3.8	5 / 1.7	5 / 1.7	6 / 2.1			1 / .3			35 / 12.0
5 / 6.6-6.7		1 / .3	3 / 1.0	7 / 2.4	7 / 2.4	8 / 2.7	7 / 2.4	3 / 1.0	3 / 1.0	2 / .7	1 / .3				42 / 14.4
4 / 6.4-6.5	3 / 1.0		5 / 1.7	5 / 1.7	8 / 2.7	2 / .7	3 / 1.0	1 / .3							27 / 9.2
3 / 6.2-6.3		1 / .3	2 / .7	3 / 1.0	3 / 1.0	2 / .7	1 / .3								12 / 4.1
2 / 6.0-6.1			1 / .3	2 / .7											3 / 1.0
1 / 5.8-5.9							1 / .3								1 / .3
COLUMN TOTAL	5 / 1.7	4 / 1.4	13 / 4.5	27 / 9.2	37 / 12.7	53 / 18.2	34 / 11.6	33 / 11.3	39 / 13.4	20 / 6.8	11 / 3.8	12 / 4.1	3 / 1.0	1 / .3	292 / 100.0

Table 32. Male Bivariate Table of Heel Breadth, Right (VAR 17)
and BOF Circumference, Right (VAR 16)

Table 33.

VAR17	VAR25 21.5–21.9 (1)	23.5–23.9 (2)	24.0–24.4 (5)	24.5–24.9 (6)	25.0–25.4 (7)	25.5–25.9 (8)	26.0–26.4 (9)	26.5–26.9 (10)	27.0–27.4 (11)	27.5–27.9 (12)	28.0–28.4 (13)	28.5–28.9 (14)	29.0–29.4 (15)	29.5–29.9 (16)	30.0–30.4 (17)	ROW TOTAL
14 / 8.4–8.5											1 / .3		1 / .3			2 / .7
13 / 8.2–8.3												1 / .3		1 / .3		2 / .7
12 / 8.0–8.1											2 / .7	1 / .3		1 / .3		4 / 1.4
11 / 7.8–7.9								2 / .7		1 / .3	1 / .3		1 / .3	1 / .3	2 / .7	8 / 2.7
10 / 7.6–7.7							2 / .7	1 / .3	4 / 1.4		4 / 1.4	1 / .3	1 / .3		1 / .3	14 / 4.8
9 / 7.4–7.5				1 / .3	1 / .3	1 / .3		2 / .7	6 / 2.1	4 / 1.4	7 / 2.4	4 / 1.4	3 / 1.0	1 / .3	1 / .3	31 / 10.6
8 / 7.2–7.3				1 / .3	2 / .7	3 / 1.0	3 / 1.0	5 / 1.7	9 / 3.1	7 / 2.4	8 / 2.7	4 / 1.4	4 / 1.4	1 / .3		47 / 16.1
7 / 7.0–7.1	1 / .3	1 / .3	1 / .3	1 / .3	2 / .7	6 / 2.1	7 / 2.4	9 / 3.1	13 / 4.5	7 / 2.4	9 / 3.1	2 / .7	3 / 1.0	2 / .7		64 / 21.9
6 / 6.8–6.9			1 / .3	2 / .7	1 / .3	4 / 1.4	8 / 2.7	9 / 3.1	5 / 1.7		2 / .7	2 / .7	1 / .3			35 / 12.0
5 / 6.6–6.7				5 / 1.7	6 / 2.1	6 / 2.1	5 / 1.7	8 / 2.7	6 / 2.1	4 / 1.4	2 / .7					42 / 14.4
4 / 6.4–6.5			2 / .7	1 / .3	6 / 2.1	3 / 1.0	6 / 2.1	4 / 1.4	3 / 1.0	1 / .3	1 / .3					27 / 9.2
3 / 6.2–6.3		1 / .3		1 / .3	3 / 1.0	2 / .7	1 / .3	2 / .7	1 / .3	1 / .3						12 / 4.1
2 / 6.0–6.1			1 / .3					1 / .3	1 / .3							3 / 1.0
1 / 5.8–5.9							1 / .3									1 / .3
COLUMN TOTAL	1 / .3	2 / .7	5 / 1.7	12 / 4.1	21 / 7.2	26 / 8.9	32 / 11.0	43 / 14.7	48 / 16.4	25 / 8.6	37 / 12.7	14 / 4.8	15 / 5.1	7 / 2.4	4 / 1.4	292 / 100.0

Table 33.   Male Bivariate Table of Heel Breadth, Right (VAR 17) and Foot Length, Right (VAR 25)

191

VAR15 — Instep Circumference; VAR17 — Heel Breadth, Right. Cell entries show count (top) and percent (bottom).

VAR17	22.0–22.4 (1)	23.0–23.4 (2)	23.5–23.9 (3)	24.0–24.4 (4)	24.5–24.9 (5)	25.0–25.4 (6)	25.5–25.9 (7)	26.0–26.4 (8)	26.5–26.9 (9)	27.0–27.4 (10)	27.5–27.9 (11)	28.0–28.4 (12)	28.5–28.9 (13)	29.0–29.4 (14)	29.5–29.9 (15)	ROW TOTAL
14 (8.4–8.5)											1 / .3		1 / .3			2 / .7
13 (8.2–8.3)											1 / .3		1 / .3			2 / .7
12 (8.0–8.1)											1 / .3		1 / .3	1 / .3	1 / .3	4 / 1.4
11 (7.8–7.9)									1 / .3	1 / .3	2 / .7	1 / .3	2 / .7	1 / .3		8 / 2.7
10 (7.6–7.7)						1 / .3		1 / .3	3 / 1.0	3 / 1.0	2 / .7	2 / .7	1 / .3	1 / .3		14 / 4.8
9 (7.4–7.5)			1 / .3		1 / .3	2 / .7	4 / 1.4	3 / 1.0	4 / 1.4	5 / 1.7	5 / 1.7	4 / 1.4	2 / .7			31 / 10.7
8 (7.2–7.3)					1 / .3	2 / .7	4 / 1.4	5 / 1.7	9 / 3.1	10 / 3.4	3 / 1.0	6 / 2.1	3 / 1.0	2 / .7		47 / 16.2
7 (7.0–7.1)				3 / 1.0	6 / 2.1	6 / 2.1	9 / 3.1	14 / 4.8	12 / 4.1	5 / 1.7	6 / 2.1	2 / .7	1 / .3			64 / 22.0
6 (6.8–6.9)				1 / .3	1 / .3	7 / 2.4	11 / 3.8	5 / 1.7	6 / 2.1	3 / 1.0			1 / .3			35 / 12.0
5 (6.6–6.7)			1 / .3	5 / 1.7	1 / .3	12 / 4.1	10 / 3.4	7 / 2.4	3 / 1.0	3 / 1.0						42 / 14.4
4 (6.4–6.5)	1 / .3	2 / .7	3 / 1.0	5 / 1.7	2 / .7	8 / 2.7	2 / .7	3 / 1.0								25 / 8.6
3 (6.2–6.3)		1 / .3	1 / .3	2 / .7	2 / .7	5 / 1.7		1 / .3								12 / 4.1
2 (6.0–6.1)			1 / .3	2 / .7												3 / 1.0
1 (5.8–5.9)						1 / .3										1 / .3
COLUMN TOTAL	1 / .3	3 / 1.0	7 / 2.4	19 / 6.5	16 / 5.5	45 / 15.5	41 / 14.1	44 / 15.1	38 / 13.1	23 / 7.9	24 / 8.2	13 / 4.5	11 / 3.8	5 / 1.7	1 / .3	291 / 100.0

Table 34. Male Bivariate Table of Heel Breadth, Right (VAR 17) and Instep Circumference (VAR 15)

VAR26

VAR14	8.6 - 8.7 (1)	9.0 - 9.1 (3)	9.2 - 9.3 (4)	9.4 - 9.5 (5)	9.6 - 9.7 (6)	9.8 - 9.9 (7)	10.0 - 10.1 (8)	10.2 - 10.3 (9)	10.4 - 10.5 (10)	10.6 - 10.7 (11)	10.8 - 10.9 (12)	11.0 - 11.1 (13)	11.2 - 11.3 (14)	11.4 - 11.5 (15)	11.8 - 11.9 (17)	ROW TOTAL
14 38.0-38.9									1 .3		1 .3	2 .7	1 .3			5 1.7
13 37.0-37.9				1 .3			1 .3		2 .7		3 1.0	2 .7		1 .3		10 3.5
12 36.0-36.9						2 .7	1 .3	1 .3	15 5.2	4 1.4	2 .7	7 2.4	3 1.0	1 .3	1 .3	37 12.8
11 35.0-35.9				2 .7	6 2.1	3 1.0	9 3.1	9 3.1	10 3.5	7 2.4	3 1.0		1 .3			50 17.4
10 34.0-34.9			1 .3	6 2.1	6 2.1	9 3.1	13 4.5	12 4.2	7 2.4	6 2.1	3 1.0	2 .7	1 .3			66 22.9
9 33.0-33.9		3 1.0	1 .3	6 2.1	12 4.2	9 3.1	15 5.2	8 2.8	5 1.7	1 .3						60 20.8
8 32.0-32.9	2 .7	1 .3	5 1.7	11 3.8	6 2.1	2 .7	8 2.8	3 1.0	2 .7	1 .3						41 14.2
7 31.0-31.9		4 1.4	3 1.0		5 1.7	1 .3	1 .3									14 4.9
6 30.0-30.9		1 .3	1 .3	1 .3			1 .3									4 1.4
1 25.0-25.9							1 .3									1 .3
COLUMN TOTAL	2 .7	9 3.1	11 3.8	27 9.4	35 12.2	26 9.0	50 17.4	33 11.5	42 14.6	19 6.6	12 4.2	13 4.5	6 2.1	2 .7	1 .3	288 100.0

Table 35. Male Bivariate Table of Heel-Ankle Circ (VAR 14) and BOF Breadth, Horiz, Right (VAR 26)

193

VAR16

VAR14	122.0 - 22.4 (1)	22.5 - 22.9 (2)	23.0 - 23.4 (3)	23.5 - 23.9 (4)	24.0 - 24.4 (5)	24.5 - 24.9 (6)	25.0 - 25.4 (7)	25.5 - 25.9 (8)	26.0 - 26.4 (9)	26.5 - 26.9 (10)	27.0 - 27.4 (11)	27.5 - 27.9 (12)	28.0 - 28.4 (13)	28.5 - 28.9 (14)	ROW TOTAL
14 38.0-38.9											1 .3	1 .3	2 .7	1 .3	5 1.7
13 37.0-37.9							1 .3	1 .3	2 .7	1 .3	1 .3	3 1.0	1 .3		10 3.5
12 36.0-36.9						1 .3	2 .7	3 1.0	10 3.5	8 2.8	6 2.1	6 2.1	1 .3		37 12.8
11 35.0-35.9					1 .3	6 2.1	9 3.1	10 3.5	15 5.2	7 2.4	1 .3	1 .3	1 .3		51 17.6
10 34.0-34.9				4 1.4	11 3.8	18 6.2	8 2.8	12 4.2	9 3.1	2 .7	2 .7				66 22.8
9 33.0-33.9		1 .3	1 .3	7 2.4	12 4.2	21 7.3	8 2.8	6 2.1	3 1.0	1 .3					60 20.8
8 32.0-32.9	2 .7	2 .7	5 1.7	9 3.1	9 3.1	7 2.4	6 2.1	1 .3							41 14.2
7 31.0-31.9	2 .7	1 .3	4 1.4	6 2.1	2 .7										15 5.2
6 30.0-30.9	1 .3		2 .7		1 .3										4 1.4
COLUMN TOTAL	5 1.7	4 1.4	12 4.2	26 9.0	36 12.5	53 18.3	34 11.8	33 11.4	39 13.5	20 6.9	11 3.8	12 4.2	3 1.0	1 .3	289 100.0

Table 36. Male Bivariate Table of Heel-Ankle Circ (VAR 14)
and BOF Circ, Right (VAR 16)

194

```
                  VAR24
                   I
                   I17.0 -  17.5 -  18.0 -  18.5 -  19.0 -  19.5 -  20.0 -  20.5 -  21.0 -  21.5 -  22.0 -   ROW
                   I 17.4    17.9    18.4    18.9    19.4    19.9    20.4    20.9    21.4    21.9    22.4   TOTAL
           VAR14   I    1  I    2  I    3  I    4  I    5  I    6  I    7  I    8  I    9  I   10  I   11  I
         ----------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I
            14   I I       I       I       I       I       I       I       I       I    1  I    3  I    1  I    5
         38.0-38.9 I       I       I       I       I       I       I       I       I   .3  I  1.0  I   .3  I  1.7
           -I------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I
            13   I I       I       I       I    1  I       I    1  I    1  I       I    2  I    2  I    3  I   10
         37.0-37.9 I       I       I       I   .3  I       I   .3  I   .3  I       I   .7  I   .7  I  1.0  I  3.5
           -I------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I
            12   I I       I       I       I       I       I    4  I   11  I    9  I    6  I    4  I    3  I   37
         36.0-36.9 I       I       I       I       I       I  1.4  I  3.8  I  3.1  I  2.1  I  1.4  I  1.0  I 12.8
           -I------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I
            11   I I       I       I       I       I    7  I   11  I   15  I    8  I    9  I    1  I       I   51
         35.0-35.9 I       I       I       I       I  2.4  I  3.8  I  5.2  I  2.8  I  3.1  I   .3  I       I 17.7
           -I------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I
            10   I I       I       I    3  I    8  I   16  I   15  I   11  I   11  I    1  I       I       I   65
         34.0-34.9 I       I       I  1.0  I  2.8  I  5.6  I  5.2  I  3.8  I  3.8  I   .3  I       I       I 22.6
           -I------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I
             9   I I       I    4  I    3  I    7  I   15  I   18  I   10  I    3  I       I       I       I   60
         33.0-33.9 I       I  1.4  I  1.0  I  2.4  I  5.2  I  6.3  I  3.5  I  1.0  I       I       I       I 20.8
           -I------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I
             8   I I       I    4  I   12  I   14  I    6  I    5  I       I       I       I       I       I   41
         32.0-32.9 I       I  1.4  I  4.2  I  4.9  I  2.1  I  1.7  I       I       I       I       I       I 14.2
           -I------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I
             7   I I    1  I    4  I    4  I    4  I    2  I       I       I       I       I       I       I   15
         31.0-31.9 I   .3  I  1.4  I  1.4  I  1.4  I   .7  I       I       I       I       I       I       I  5.2
           -I------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I
             6   I I       I    1  I    2  I       I       I       I       I       I       I       I       I    3
         30.0-30.9 I       I   .3  I   .7  I       I       I       I       I       I       I       I       I  1.0
           -I------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I
             1   I I       I       I       I       I       I       I    1  I       I       I       I       I    1
         25.0-25.9 I       I       I       I       I       I       I   .3  I       I       I       I       I   .3
           -I------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I-------I
          COLUMN       1       13      24      34      46      54      49      31      19      10       7     288
          TOTAL       .3      4.5     8.3    11.8    16.0    18.8    17.0    10.8     6.6     3.5     2.4   100.0
```

Table 37.   Male Bivariate Table of Heel-Ankle Circumference (VAR 14)
            and BOF Length, Right (VAR 24)

VAR25

VAR14	21.5–21.9 (1)	23.5–23.9 (5)	24.0–24.4 (6)	24.5–24.9 (7)	25.0–25.4 (8)	25.5–25.9 (9)	26.0–26.4 (10)	26.5–26.9 (11)	27.0–27.4 (12)	27.5–27.9 (13)	28.0–28.4 (14)	28.5–28.9 (15)	29.0–29.4 (16)	29.5–29.9 (17)	30.0–30.4 (18)	ROW TOTAL
14 / 38.0–38.9											1 / .3		2 / .7	1 / .3	1 / .3	5 / 1.7
13 / 37.0–37.9									1 / .3		1 / .3	1 / .3	4 / 1.4	1 / .3	2 / .7	10 / 3.5
12 / 36.0–36.9								1 / .3	4 / 1.4	4 / 1.4	10 / 3.5	8 / 2.8	5 / 1.7	4 / 1.4	1 / .3	37 / 12.8
11 / 35.0–35.9						1 / .3	1 / .3	6 / 2.1	14 / 4.8	7 / 2.4	11 / 3.8	5 / 1.7	4 / 1.4	1 / .3		50 / 17.3
10 / 34.0–34.9	1 / .3				2 / .7	6 / 2.1	10 / 3.5	12 / 4.2	11 / 3.8	13 / 4.5	11 / 3.8					66 / 22.8
9 / 33.0–33.9			1 / .3	2 / .7	2 / .7	6 / 2.1	13 / 4.5	19 / 6.6	13 / 4.5	1 / .3	3 / 1.0					60 / 20.8
8 / 32.0–32.9			1 / .3	4 / 1.4	13 / 4.5	10 / 3.5	5 / 1.7	3 / 1.0	5 / 1.7							41 / 14.2
7 / 31.0–31.9		1 / .3	1 / .3	4 / 1.4	4 / 1.4	2 / .7	3 / 1.0									15 / 5.2
6 / 30.0–30.9		1 / .3	2 / .7	1 / .3												4 / 1.4
1 / 25.0–25.9									1 / .3							1 / .3
COLUMN TOTAL	1 / .3	2 / .7	5 / 1.7	11 / 3.8	21 / 7.3	25 / 8.7	32 / 11.1	42 / 14.5	48 / 16.6	25 / 8.7	37 / 12.8	14 / 4.8	15 / 5.2	7 / 2.4	4 / 1.4	289 / 100.0

Table 38. Male Bivariate Table of Heel-Ankle Circ (VAR 14) and Foot Length, Right (VAR 25)

196

VAR14	5.8-5.9 (1)	6.0-6.1 (2)	6.2-6.3 (3)	6.4-6.5 (4)	6.6-6.7 (5)	6.8-6.9 (6)	7.0-7.1 (7)	7.2-7.3 (8)	7.4-7.5 (9)	7.6-7.7 (10)	7.8-7.9 (11)	8.0-8.1 (12)	8.2-8.3 (13)	8.4-8.5 (14)	ROW TOTAL
14 38.0-38.9										3 1.0	1 .3		1 .3		5 1.7
13 37.0-37.9							1 .3	1 .3	3 1.0	1 .3	1 .3	2 .7		1 .3	10 3.4
12 36.0-36.9						1 .3	4 1.4	14 4.8	7 2.4	4 1.4	4 1.4	1 .3	1 .3	1 .3	37 12.8
11 35.0-35.9				1 .3	2 .7	8 2.8	15 5.2	9 3.1	10 3.4	4 1.4	1 .3	1 .3			51 17.6
10 34.0-34.9				2 .7	12 4.1	7 2.4	24 8.3	13 4.5	6 2.1	1 .3	1 .3				66 22.8
9 33.0-33.9		1 .3	4 1.4	7 2.4	11 3.9	11 3.8	15 5.2	8 2.8	2 .7	1 .3					60 20.7
8 32.0-32.9	1 .3	1 .3	5 1.7	9 3.1	11 3.8	6 2.1	5 1.7		3 1.0						41 14.1
7 31.0-31.9		1 .3	2 .7	5 1.7	5 1.7		1 .3	1 .3							15 5.2
6 30.0-30.9			1 .3	3 1.0											4 1.4
1 25.0-25.9								1 .3							1 .3
COLUMN TOTAL	1 .3	3 1.0	12 4.1	27 9.3	41 14.1	33 11.4	65 22.4	47 16.2	31 10.7	14 4.8	8 2.8	4 1.4	2 .7	2 .7	290 100.0

Table 39. Male Bivariate Table of Heel-Ankle Circ (VAR 14)
and Heel Breadth, Right (VAR 17)

VAR15

VAR14	22.0–22.4 (1)	23.0–23.4 (2)	23.5–23.9 (3)	24.0–24.4 (4)	24.5–24.9 (5)	25.0–25.4 (6)	25.5–25.9 (7)	26.0–26.4 (8)	26.5–26.9 (9)	27.0–27.4 (10)	27.5–27.9 (11)	28.0–28.4 (12)	28.5–28.9 (13)	29.0–29.4 (14)	29.5–29.9 (15)	ROW TOTAL
14 38.0–38.9											1 .3	2 .7		2 .7		5 1.7
13 37.0–37.9										1 .3	3 1.0		5 1.7	1 .3		10 3.5
12 36.0–36.9							1 .3	1 .3	1 .3	7 2.4	10 3.5	9 3.1	6 2.1	1 .3	1 .3	37 12.8
11 35.0–35.9						1 .3	6 2.1	11 3.8	14 4.9	10 3.5	6 2.1	2 .7		1 .3		51 17.7
10 34.0–34.9					2 .7	5 1.7	13 4.5	17 5.9	19 6.6	5 1.7	4 1.4					65 22.6
9 33.0–33.9				3 1.0	6 2.1	21 7.3	13 4.5	13 4.5	4 1.4							60 20.8
8 32.0–32.9			2 .7	7 2.4	6 2.1	16 5.6	7 2.4	2 .7								40 13.9
7 31.0–31.9	1 .3	2 .7	3 1.0	7 2.4	1 .3	1 .3										15 5.2
6 30.0–30.9		1 .3	2 .7	1 .3												4 1.4
1 25.0–25.9					1 .3											1 .3
COLUMN TOTAL	1 .3	3 1.0	7 2.4	18 6.3	16 5.6	44 15.3	40 13.9	44 15.3	38 13.2	23 8.0	24 8.3	13 4.5	11 3.8	5 1.7	1 .3	288 100.0

Table 40.   Male Bivariate Table of Heel-Ankle Circumference (VAR 14) and Instep Circumference (VAR 15)

VAR21

Reconstructed bivariate frequency table (each cell shows count and percentage of total; total N = 289).

VAR14 (circumference)	51.0–53.9 (1)	54.0–56.9 (2)	57.0–59.9 (3)	60.0–62.9 (4)	63.0–65.9 (5)	66.0–68.9 (6)	69.0–71.9 (7)	72.0–74.9 (8)	75.0–77.9 (9)	78.0–80.9 (10)	81.0–83.9 (11)	84.0–86.9 (12)	87.0–89.9 (13)	90.0–92.9 (14)	93.0–95.9 (15)	96.0–98.9 (16)	99.0–101.9 (17)	102.0–104.9 (18)	105.0–107.9 (19)	108.0–110.9 (20)	ROW TOTAL
14 — 38.0–38.9																1 (.3)		3 (1.0)			5 / 1.7
13 — 37.0–37.9												2 (.7)		4 (1.4)	2 (.7)	1 (.3)			1 (.3)		10 / 3.5
12 — 36.0–36.9							2 (.7)	2 (.7)			7 (2.4)	7 (2.4)	4 (1.4)	7 (2.4)	3 (1.0)	1 (.3)	3 (1.0)			1 (.3)	37 / 12.9
11 — 35.0–35.9				2 (.7)	1 (.3)	4 (1.4)	5 (1.7)	4 (1.4)	6 (2.1)	4 (1.4)	9 (3.1)	2 (.7)	9 (3.1)	3 (1.0)		2 (.7)					51 / 17.6
10 — 34.0–34.9			1 (.3)	1 (.3)	5 (1.7)	6 (2.1)	7 (2.4)	8 (2.8)	12 (4.2)	11 (3.8)	2 (.7)	5 (1.7)	1 (.3)	4 (1.4)		2 (.7)					65 / 22.5
9 — 33.0–33.9			2 (.7)	5 (1.7)	15 (5.2)	8 (2.8)	8 (2.8)	4 (1.4)	7 (2.4)	1 (.3)	6 (2.1)	3 (1.0)	1 (.3)								60 / 20.8
8 — 32.0–32.9		1 (.3)	2 (.7)	10 (3.5)	9 (3.1)	8 (2.8)	4 (1.4)	2 (.7)	2 (.7)	1 (.3)	1 (.3)	1 (.3)									41 / 14.2
7 — 31.0–31.9	2 (.7)	3 (1.0)	2 (.7)	1 (.3)	3 (1.0)	2 (.7)		1 (.3)	1 (.3)												15 / 5.2
6 — 30.0–30.9				2 (.7)	1 (.3)	1 (.3)															4 / 1.4
1 — 25.0–25.9							1 (.3)														1 / .3
COLUMN TOTAL	2 / .7	4 / 1.4	9 / 3.1	20 / 6.9	34 / 11.8	28 / 9.7	27 / 9.3	20 / 6.9	28 / 9.7	17 / 5.9	27 / 9.3	19 / 6.6	16 / 5.5	18 / 6.2	5 / 1.7	7 / 2.4	3 / 1.0	3 / 1.0	1 / .3	1 / .3	289 / 100.0

Table 41. Male Bivariate Table of Heel-Ankle Circumference (VAR 14) and Weight (VAR 21)

Table 42. Male Bivariate Table of Instep Circumference (VAR 15) and Ankle Circumference (VAR 13)

Each cell shows count (upper) and percent (lower). VAR13 columns across the top; VAR15 rows down the side.

VAR15 \ VAR13	1 18.5–18.9	2 19.0–19.4	3 19.5–19.9	4 20.0–20.4	5 20.5–20.9	6 21.0–21.4	7 21.5–21.9	8 22.0–22.4	9 22.5–22.9	10 23.0–23.4	11 23.5–23.9	12 24.0–24.4	13 24.5–24.9	14 25.0–25.4	15 25.5–25.9	16 26.0–26.4	17 26.5–26.9	ROW TOTAL
16 29.5–29.9											1 / .3							1 / .3
15 29.0–29.4										1 / .3	2 / .7	1 / .3					1 / .3	5 / 1.7
14 28.5–28.9								1 / .3	1 / .3	2 / .7	1 / .3	2 / .7	1 / .3	2 / .7				10 / 3.4
13 28.0–28.4									1 / .3	1 / .3	6 / 2.1	2 / .7	2 / .7		1 / .3			13 / 4.5
12 27.5–27.9						1 / .3	2 / .7	2 / .7	4 / 1.4	3 / 1.0	1 / .3	3 / 1.0	5 / 1.7	1 / .3		2 / .7		24 / 8.3
11 27.0–27.4								1 / .3	5 / 1.7	6 / 2.1	3 / 1.0	6 / 2.1		2 / .7				23 / 7.9
10 26.5–26.9					5 / 1.7	2 / .7	6 / 2.1	5 / 1.7	6 / 2.1	5 / 1.7	4 / 1.4	4 / 1.4		1 / .3				38 / 13.1
9 26.0–26.4				1 / .3	3 / 1.0	12 / 4.1	11 / 3.8	6 / 2.1	4 / 1.4	3 / 1.0	2 / .7	1 / .3	1 / .3					44 / 15.2
8 25.5–25.9				1 / .3	5 / 1.7	7 / 2.4	11 / 3.8	9 / 3.1	2 / .7	5 / 1.7		1 / .3						41 / 14.1
7 25.0–25.4				2 / .7	10 / 3.4	8 / 2.8	9 / 3.1	8 / 2.8	5 / 1.7	2 / .7		1 / .3						45 / 15.5
6 24.5–24.9			1 / .3	3 / 1.0	2 / .7	3 / 1.0	3 / 1.0	3 / 1.0										16 / 5.5
5 24.0–24.4	1 / .3		1 / .3	3 / 1.0	6 / 2.1	4 / 1.4	3 / 1.0	1 / .3										19 / 6.6
4 23.5–23.9		1 / .3		2 / .7	1 / .3	2 / .7		1 / .3										7 / 2.4
3 23.0–23.4		1 / .3		1 / .3	1 / .3													3 / 1.0
1 22.0–22.4				1 / .3														1 / .3
COLUMN TOTAL	1 / .3	2 / .7	2 / .7	13 / 4.5	25 / 9.0	33 / 11.4	42 / 14.5	44 / 15.2	30 / 10.3	29 / 10.0	22 / 7.6	22 / 7.6	13 / 4.5	6 / 2.1	2 / .7	2 / .7	1 / .3	290 / 100.0

200

VAR26

VAR15	18.6-8.7 (1)	9.0-9.1 (3)	9.2-9.3 (3)	9.4-9.5 (4)	9.6-9.7 (5)	9.8-9.9 (6)	10.0-10.1 (7)	10.2-10.3 (8)	10.4-10.5 (9)	10.6-10.7 (10)	10.8-10.9 (11)	11.0-11.1 (12)	11.2-11.3 (13)	11.4-11.5 (14)	11.8-11.9 (17)	ROW TOTAL
16 / 29.5-29.7									1 .3							1 .3
15 / 29.0-29.4									1 .3	1 .3	1 .3		2 .7			5 1.7
14 / 28.5-28.7								1 .3	2 .7		2 .7	4 1.4	1 .3	1 .3		11 3.8
13 / 28.0-28.4								1 .3	4 1.4	2 .7	1 .3	4 1.4	1 .3			13 4.5
12 / 27.5-27.7				1 .3		2 .7	1 .3	1 .3	8 2.8	2 .7	5 1.7	2 .7	1 .3	1 .3		24 8.3
11 / 27.0-27.4						1 .3	5 1.7	4 1.4	7 2.4	2 .7	1 .3	1 .3			1 .3	22 7.6
10 / 26.5-26.7				1 .3		2 .7	5 1.7	8 2.8	5 1.7	9 3.1	5 1.7	1 .3	2 .7			38 13.1
9 / 26.0-26.4		1 .3		4 1.4	5 1.7	3 1.0	13 4.5	7 2.4	6 2.1	3 1.0	1 .3		1 .3			44 15.2
8 / 25.5-25.9			1 .3	4 1.4	3 1.0	8 2.8	9 3.1	11 3.8	2 .7	3 1.0						41 14.2
7 / 25.0-25.4		3 1.0	2 .7	10 3.5	14 4.8	5 1.7	8 2.8	2 .7		1 .3						45 15.6
6 / 24.5-24.9			3 1.0	2 .7	4 1.4	4 1.4	2 .7		1 .3							16 5.5
5 / 24.0-24.4	2 .7	1 .3	3 1.0	3 1.0	4 1.4		4 1.4	1 .3								18 6.2
4 / 23.5-23.7		4 1.4	2 .7	1 .3												7 2.4
3 / 23.0-23.4			1 .3	1 .3	1 .3											3 1.0
1 / 22.0-22.4					1 .3											1 .3
COLUMN TOTAL	2 .7	9 3.1	12 4.2	27 9.3	35 12.1	27 9.3	50 17.3	33 11.4	41 14.2	19 6.6	12 4.2	13 4.5	6 2.1	2 .7	1 .3	289 100.0

Table 43. Male Bivariate Table of Instep Circumference (VAR 15) and BOF Breadth, Horiz, Right (VAR 26)

VAR25

VAR15	19.0-19.4 (1)	20.0-20.4 (3)	20.5-20.9 (4)	21.0-21.4 (5)	21.5-21.9 (6)	22.0-22.4 (7)	22.5-22.9 (8)	23.0-23.4 (9)	23.5-23.9 (10)	24.0-24.4 (11)	24.5-24.9 (12)	25.0-25.4 (13)	25.5-25.9 (14)	26.0-26.4 (15)	26.5-26.9 (16)	27.0-27.4 (17)	27.5-27.9 (18)	28.5-28.9 (20)	ROW TOTAL
18 27.0-27.4														1 .2					1 .2
17 26.5-26.9																	1 .2		1 .2
15 25.5-25.9														4 .8	2 .4	1 .2	2 .4	1 .2	10 2.0
14 25.0-25.4										1 .2	2 .4	6 1.2	5 1.0	3 .6	2 .4	1 .2			20 4.1
13 24.5-24.9								2 .4	2 .4	4 .8	4 .8	4 .8	11 2.2	5 1.0	6 1.2	1 .2	1 .2		40 8.2
12 24.0-24.4								1 ?	8 1.6	9 1.8	5 1.0	10 2.0	10 2.0	10 2.0	3 .6	4 .8			60 12.3
11 23.5-23.9							6 1.2	6 1.2	6 1.2	14 2.9	19 3.9	14 2.9	6 1.2	1 .2	3 .6				75 15.3
10 23.0-23.4						2 .4	6 1.2	8 1.6	15 3.1	20 4.1	17 3.5	21 4.3	9 1.8	3 .6	2 .4				103 21.1
9 22.5-22.9					2 .4	4 .8	6 1.2	15 3.1	18 3.7	17 3.5	8 1.6	11 2.2	4 .8		1 .2				86 17.6
8 22.0-22.4		1 .2			1 .2	3 .6	6 1.2	11 2.2	9 1.8	7 1.4	6 1.2	2 .4							46 9.4
7 21.5-21.9					3 .6	5 1.0	4 .8	5 1.0	7 1.4	5 1.0	2 .4		1 .2						32 6.5
6 21.0-21.4			1 .2		4 .8	2 .4	3 .6	1 .2	1 .2										12 2.5
5 20.5-20.9					1 .2														1 .2
4 20.0-20.4				1 .2															1 .2
1 18.5-18.9	1 .2																		1 .2
COLUMN TOTAL	1 .2	1 .2	1 .2	1 .2	10 2.0	17 3.5	31 6.3	4? 10.0	66 13.5	77 15.7	63 12.9	68 13.9	46 9.4	27 5.5	19 3.9	7 1.4	4 .8	1 .2	489 100.0

Table 44.   Male Bivariate Table of Instep Circumference (VAR 15) and Foot Length, Right (VAR 25)

VAR21

VAR15	51.0–53.9 (1)	54.0–56.9 (2)	57.0–59.9 (3)	60.0–62.9 (4)	63.0–65.9 (5)	66.0–68.9 (6)	69.0–71.9 (7)	72.0–74.9 (8)	75.0–77.9 (9)	78.0–80.9 (10)	81.0–83.9 (11)	84.0–86.9 (12)	87.0–89.9 (13)	90.0–92.9 (14)	93.0–95.9 (15)	96.0–98.9 (16)	99.0–101.9 (17)	102.0–104.9 (18)	105.0–107.9 (19)	108.0–110.9 (20)	ROW TOTAL
16 — 29.5–29.9																				1 (.3)	1 / .3
15 — 29.0–29.4												3 (1.0)		1 (.3)				1 (.3)			5 / 1.7
14 — 28.5–28.9											1 (.3)		2 (.7)	4 (1.4)	1 (.3)	1 (.3)	1 (.3)		1 (.3)		11 / 3.8
13 — 28.0–28.4								1 (.3)				2 (.7)	1 (.3)	3 (1.0)	3 (1.0)	1 (.3)	1 (.3)	1 (.3)			13 / 4.5
12 — 27.5–27.9								1 (.3)	1 (.3)		7 (2.4)	4 (1.4)	3 (1.0)	2 (.7)	1 (.3)	4 (1.4)		1 (.3)			24 / 8.3
11 — 27.0–27.4						2 (.7)	2 (.7)	1 (.3)	1 (.3)	3 (1.0)	3 (1.0)	3 (1.0)	4 (1.4)	3 (1.0)			1 (.3)				23 / 7.9
10 — 26.5–26.9				1 (.3)		3 (1.0)	5 (1.7)	5 (1.7)	4 (1.4)	10 (3.4)	3 (1.0)	3 (1.0)	2 (.7)	1 (.3)		1 (.3)					38 / 13.1
9 — 26.0–26.4				1 (.3)	4 (1.4)	3 (1.0)	5 (1.7)	5 (1.7)	11 (3.8)	1 (.3)	8 (2.8)	2 (.7)	2 (.7)	2 (.7)							44 / 15.2
8 — 25.5–25.9			2 (.7)	3 (1.0)	8 (2.8)	8 (2.8)	9 (3.1)	2 (.7)	2 (.7)	1 (.3)	4 (1.4)			1 (.3)							40 / 13.8
7 — 25.0–25.4		1 (.3)	1 (.3)	9 (3.1)	10 (3.4)	7 (2.4)	4 (1.4)	2 (.7)	5 (1.7)	2 (.7)		2 (.7)	1 (.3)	1 (.3)							45 / 15.5
6 — 24.5–24.9		1 (.3)		2 (.7)	5 (1.7)	2 (.7)	2 (.7)	3 (1.0)	1 (.3)												16 / 5.5
5 — 24.0–24.4		1 (.3)	4 (1.4)	4 (1.4)	5 (1.7)	2 (.7)			1 (.3)		1 (.3)		1 (.3)								19 / 6.6
4 — 23.5–23.9			1 (.3)	2 (.7)	2 (.7)	1 (.3)			1 (.3)												7 / 2.4
3 — 23.0–23.4	1 (.3)	1 (.3)	1 (.3)																		3 / 1.0
1 — 22.0–22.4	1 (.3)																				1 / .3
COLUMN TOTAL	2 / .7	4 / 1.4	9 / 3.1	22 / 7.6	34 / 11.7	28 / 9.7	27 / 9.3	20 / 6.9	27 / 9.3	17 / 5.9	27 / 9.3	19 / 6.6	16 / 5.5	18 / 6.2	5 / 1.7	7 / 2.4	3 / 1.0	3 / 1.0	1 / .3	1 / .3	290 / 100.0

Table 45. Male Bivariate Table of Instep Circumference (VAR 15) and Weight (VAR 21)

VAR1

VAR25	141.0-142.9 (1)	143.0-144.9 (2)	147.0-148.9 (4)	149.0-150.9 (5)	151.0-152.9 (6)	153.0-154.9 (7)	155.0-156.9 (8)	157.0-158.9 (9)	159.0-160.9 (10)	161.0-162.9 (11)	163.0-164.9 (12)	165.0-166.9 (13)	167.0-168.9 (14)	169.0-170.9 (15)	171.0-172.9 (16)	173.0-174.9 (17)	175.0-176.9 (18)	177.0-178.9 (19)	ROW TOTAL
20 / 24.5-28.9																1 .2			1 .2
18 / 27.5-27.9											1 .2					1 .2	2 .4		4 .8
17 / 27.0-27.4							1 .2				1 .2	2 .4	1 .2	1 .2		1 .2	1 .2		8 1.6
16 / 26.5-26.9											1 .2	1 .2	3 .6	5 1.0	3 .6	2 .4	2 .4	2 .4	19 3.9
15 / 26.0-26.4								1 .2	1 .2	2 .4	8 1.6	1 .2	5 1.0	5 1.0	2 .4	1 .2	1 .2	27 5.5
14 / 25.5-25.9					1 .2		1 .2	4 .8	7 1.4	6 1.2	9 1.8	6 1.2	6 1.2	1 .2	4 .8	1 .2		45 9.4
13 / 25.0-25.4						1 .2	4 .8	11 2.2	8 1.6	11 2.2	11 2.2	9 1.8	5 1.0	6 1.2		2 .4		68 13.8
12 / 24.5-24.9						6 1.2	8 1.6	8 1.6	10 2.0	10 2.0	9 1.8	6 1.2	1 .2	2 .4	2 .4		1 .2	63 12.8
11 / 24.0-24.4				1 .2		4 .8	6 1.2	15 3.1	14 2.9	10 2.0	12 2.4	8 1.6	7 1.4					77 15.7
10 / 23.5-23.9			1 .2	2 .4	5 1.0	7 1.4	6 1.2	9 1.8	14 2.9	11 2.2	3 .6	5 1.0	3 .6	1 .2				67 13.6
9 / 23.0-23.4				5 1.0	4 .8	5 1.0	15 3.1	5 1.0	4 .8	5 1.0	3 .6	1 .2	1 .2	1 .2				49 10.0
8 / 22.5-22.9				1 .2	7 1.4	4 .8	9 1.8	7 1.4	1 .2	1 .2	1 .2							31 6.3
7 / 22.0-22.4				1 .2	1 .2	2 .4	5 1.0	1 .2	4 .8	1 .2	2 .4							17 3.5
6 / 21.5-21.9			2 .4	3 .6	4 .8	1 .2												10 2.0
5 / 21.0-21.4					1 .2													1 .2
4 / 20.5-20.9		1 .2																1 .2
3 / 20.0-20.4	1 .2																	1 .2
1 / 19.0-19.4	1 .2																	1 .2
COLUMN TOTAL	2 .4	1 .2	4 .8	13 2.6	23 4.7	27 5.5	45 9.2	53 10.8	58 11.8	55 11.2	51 10.4	54 11.0	37 7.5	23 4.7	19 3.9	13 2.6	9 1.8	4 .8	491 100.0

Table 46. Male Bivariate Table of Foot Length, Right (VAR 25)
and Stature (VAR 1)

VAR1	51.0-53.9 (1)	54.0-56.9 (2)	57.0-59.9 (3)	60.0-62.9 (4)	63.0-65.9 (5)	66.0-68.9 (6)	69.0-71.9 (7)	72.0-74.9 (8)	75.0-77.9 (9)	78.0-80.9 (10)	81.0-83.9 (11)	84.0-86.9 (12)	87.0-89.9 (13)	90.0-92.9 (14)	93.0-96.9 (15)	96.0-98.9 (16)	99.0-101.9 (17)	102.0-104.9 (18)	105.0-107.9 (19)	108.0-110.9 (20)	ROW TOTAL
19 (192.4-194.3)							1 .3				2 .7			1 .3							4 1.3
18 (190.4-192.3)							1 .3				1 .3					1 .3		2 .7			5 1.7
17 (188.4-190.3)								1 .3			2 .7			2 .7				1 .3			6 2.1
16 (186.4-188.3)											1 .3			1 .3	1 .3			1 .3			4 1.3
15 (184.4-186.3)						2 .7	1 .3		2 .7	1 .3	1 .3	1 .3			1 .3	1 .3		1 .3	1 .3		12 4.1
14 (182.4-184.3)				1 .3			2 .7	3 1.0	2 .7		2 .7	1 .3	2 .7	1 1.0	1 .3	1 .3					18 6.2
13 (180.4-182.3)				3 1.0	1 .3		2 .7	3 1.0	2 .7		2 .7	1 .3	7 2.4	4 1.4		1 .3	1 .3				27 9.2
12 (178.4-180.3)				1 .3		4 1.4	2 .7	4 1.4	3 1.0	3 1.0	5 1.7	3 1.0	1 .3	1 .3	2 .7	1 .3				1 .3	31 10.6
11 (176.4-178.3)				1 .3	3 1.0	1 .3	1 .3	3 1.0	4 1.4	3 1.0	2 .7	1 .3	4 1.4	2 .7							25 9.5
10 (174.4-176.3)			1 .3	2 .7	4 1.4	4 1.4	5 1.7	1 .3	1 .3	1 .3	4 1.4	1 .3	1 .3	3 1.0		1 .3					29 9.9
9 (172.4-174.3)			1 .3	1 .3	2 .7	3 1.0	5 1.7	3 1.0	8 2.7	4 1.4	5 1.7	4 1.4		1 .3							37 12.7
8 (170.4-172.3)		1 .3	1 .3	1 .3	8 2.7	3 1.0	2 .7	2 .7	2 .7		2 .7	3 1.0			1 .3						26 8.9
7 (168.4-170.3)	1 .3			1 .3	3 1.0	6 2.1	5 1.7	1 .3		1 .3	2 .7		1 .3								21 7.2
6 (166.4-168.3)		1 .3	2 .7	3 1.0	5 1.7	2 .7	2 .7	1 .3	1 .3	1 .3			1 .3								19 6.5
5 (164.4-166.3)	1 .3		1 .3	4 1.4	2 .7	2 .7	1 .3			1 .3	1 .3										13 4.5
4 (162.4-164.3)		1 .3		3 1.0	3 1.0	1 .3			1 .3												9 3.1
3 (160.4-162.3)			2 .7							1 .3											3 1.0
2 (158.4-160.3)		1 .3					1 .3														2 .7
1 (156.4-158.3)							1 .3														1 .3
COLUMN TOTAL	2 .7	4 1.4	9 3.1	23 7.9	34 11.6	29 9.6	27 9.2	20 6.8	28 9.6	17 5.8	27 9.2	19 6.5	16 5.5	18 6.2	5 1.7	7 2.4	3 1.0	3 1.0	1 .3	1 .3	292 100.0

Table 47. Male Bivariate Table of Stature (VAR 1) and Weight (VAR 21)

VAR21

VAR13	42.5-44.9 (1)	45.0-47.4 (2)	47.5-49.9 (3)	50.0-52.4 (4)	52.5-54.9 (5)	55.0-57.4 (6)	57.5-59.9 (7)	60.0-62.4 (8)	62.5-64.9 (9)	65.0-67.4 (10)	67.5-69.9 (11)	70.0-72.4 (12)	72.5-74.9 (13)	75.0-77.4 (14)	77.5-79.9 (15)	80.0-82.4 (16)	87.5-89.9 (19)	ROW TOTAL
17 / 25.0-25.4																	1 / .2	1 / .2
15 / 24.0-24.4											1 / .2				1 / .2			2 / .4
14 / 23.5-23.9						1 / .2					1 / .2	1 / .2	1 / .2					4 / .8
13 / 23.0-23.4								1 / .2		3 / .6	1 / .2		1 / .2	1 / .2				7 / 1.4
12 / 22.5-22.9						1 / .2	1 / .2	3 / .6	4 / .8	3 / .6	3 / .6	2 / .4	1 / .2	1 / .2				19 / 3.9
11 / 22.0-22.4						4 / .8	1 / .2	2 / .4	8 / 1.6	9 / 1.8	4 / .8	5 / 1.0	5 / 1.0					38 / 7.8
10 / 21.5-21.9				2 / .4	5 / 1.0	6 / 1.2	10 / 2.0	15 / 3.1	15 / 3.1	8 / 1.6	1 / .2	3 / .6	1 / .2	3 / .6	1 / .2			70 / 14.3
9 / 21.0-21.4				2 / .4	5 / 1.0	7 / 1.4	23 / 4.7	16 / 3.3	16 / 3.3	8 / 1.6	6 / 1.2	4 / .8	2 / .4	2 / .4		1 / .2		92 / 18.9
8 / 20.5-20.9				3 / .6	3 / .6	17 / 3.5	12 / 2.5	14 / 2.9	6 / 1.2	9 / 1.8	8 / 1.6							72 / 14.8
7 / 20.0-20.4			5 / 1.0	8 / 1.6	14 / 2.9	10 / 2.0	17 / 3.5	15 / 3.1	3 / .6	6 / 1.2	3 / .6							81 / 16.6
6 / 19.5-19.9		4 / .8	4 / .8	4 / .8	3 / .6	7 / 1.4	15 / 3.1	6 / 1.2	5 / 1.0									48 / 9.8
5 / 19.0-19.4	1 / .2	3 / .6	3 / .6	7 / 1.4	9 / 1.8	4 / .8	5 / 1.0	1 / .2	1 / .2									34 / 7.0
4 / 18.5-18.9		2 / .4	4 / .8	3 / .6	3 / .6	2 / .4	1 / .2	1 / .2										16 / 3.3
3 / 18.0-18.4				2 / .4														2 / .4
2 / 17.5-17.9			1 / .2															1 / .2
1 / 17.0-17.4					1 / .2													1 / .2
COLUMN TOTAL	1 / .2	9 / 1.8	17 / 3.5	31 / 6.4	43 / 8.8	59 / 12.1	85 / 17.4	74 / 15.2	58 / 11.9	46 / 9.4	28 / 5.7	15 / 3.1	11 / 2.3	7 / 1.4	2 / .4	1 / .2	1 / .2	488 / 100.0

Table 48. Female Bivariate Table of Ankle Circumference (VAR 13) and Weight (VAR 21)

Table 49. Female Bivariate Table of Ankle Circumference (VAR 13) and Foot Length, Right (VAR 25)

VAR13 \ VAR25	21.5-21.9 (1)	23.5-23.9 (5)	24.0-24.4 (6)	24.5-24.9 (7)	25.0-25.4 (8)	25.5-25.9 (9)	26.0-26.4 (10)	26.5-26.9 (11)	27.0-27.4 (12)	27.5-27.9 (13)	28.0-28.4 (14)	28.5-28.9 (15)	29.0-29.4 (16)	29.5-29.9 (17)	30.0-30.4 (18)	ROW TOTAL
17 (26.5-26.9)													1 (.3)			1 / .3
16 (26.0-26.4)									1 (.3)		1 (.3)					2 / .7
15 (25.5-25.9)									1 (.3)			1 (.3)				2 / .7
14 (25.0-25.4)											2 (.7)	2 (.7)	1 (.3)	1 (.3)		6 / 2.1
13 (24.5-24.9)							1 (.3)	2 (.7)		2 (.7)	5 (1.7)	1 (.3)	1 (.3)	1 (.3)		13 / 4.5
12 (24.0-24.4)					1 (.3)		1 (.3)	4 (1.4)	3 (1.0)	4 (1.4)	3 (1.0)	3 (1.0)	1 (.3)	2 (.7)		22 / 7.6
11 (23.5-23.9)						1 (.3)	3 (1.0)		3 (1.0)	3 (1.0)	4 (1.4)	3 (1.0)	3 (1.0)	1 (.3)	2 (.7)	23 / 7.9
10 (23.0-23.4)				1 (.3)		1 (.3)	4 (1.4)	4 (1.4)	5 (1.7)	2 (.7)	8 (2.7)		2 (.7)	1 (.3)	1 (.3)	29 / 10.0
9 (22.5-22.9)					2 (.7)	3 (1.0)	4 (1.4)	1 (.3)	5 (1.7)	8 (2.7)	3 (1.0)	1 (.3)	1 (.3)	1 (.3)	1 (.3)	30 / 10.3
8 (22.0-22.4)	1 (.3)		1 (.3)	2 (.7)	1 (.3)	4 (1.4)	6 (2.1)	12 (4.1)	7 (2.4)		4 (1.4)	2 (.7)	3 (1.0)			43 / 14.8
7 (21.5-21.9)				3 (1.0)	6 (2.1)	4 (1.4)	3 (1.0)	8 (2.7)	8 (2.7)	4 (1.4)	4 (1.4)	1 (.3)	1 (.3)			42 / 14.4
6 (21.0-21.4)		1 (.3)	1 (.3)	3 (1.0)	4 (1.4)	5 (1.7)	4 (1.4)	4 (1.4)	7 (2.4)	1 (.3)	3 (1.0)					33 / 11.3
5 (20.5-20.9)		1 (.3)	2 (.7)	2 (.7)	3 (1.0)	4 (1.4)	1 (.3)	7 (2.4)	5 (1.7)	1 (.3)						26 / 8.9
4 (20.0-20.4)			1 (.3)	1 (.3)	4 (1.4)	2 (.7)	3 (1.0)	1 (.3)	2 (.7)							14 / 4.8
3 (19.5-19.9)						1 (.3)			1 (.3)							2 / .7
2 (19.0-19.4)						1 (.3)	1 (.3)									2 / .7
1 (18.5-18.9)							1 (.3)									1 / .3
COLUMN TOTAL	1 / .3	2 / .7	5 / 1.7	12 / 4.1	21 / 7.2	26 / 8.9	32 / 11.0	43 / 14.8	48 / 16.5	25 / 8.6	37 / 12.7	14 / 4.8	14 / 4.8	7 / 2.4	4 / 1.4	291 / 100.0

207

VAR25

VAR26	19.0–19.4 (1)	20.0–20.4 (3)	20.5–20.9 (4)	21.0–21.4 (5)	21.5–21.9 (6)	22.0–22.4 (7)	22.5–22.9 (8)	23.0–23.4 (9)	23.5–23.9 (10)	24.0–24.4 (11)	24.5–24.9 (12)	25.0–25.4 (13)	25.5–25.9 (14)	26.0–26.4 (15)	26.5–26.9 (16)	27.0–27.4 (17)	27.5–27.9 (18)	28.5–28.9 (20)	ROW TOTAL
16 / 10.6–10.7																	1 / .2		1 / .2
15 / 10.4–10.5												1 / .2	1 / .2						2 / .4
14 / 10.2–10.3								2 / .4			1 / .2			1 / .2	1 / .2			1 / .2	6 / 1.2
13 / 10.0–10.1									1 / .2		1 / .2	1 / .2	5 / 1.0	2 / .4	3 / .6				13 / 2.7
12 / 9.8–9.9											3 / .6	4 / .8	5 / 1.0	4 / .8	4 / .8	4 / .8	1 / .2	2 / .4	27 / 5.5
11 / 9.6–9.7							1 / .2	2 / .4	2 / .4	4 / .8	3 / .6	6 / 1.2	7 / 1.4	6 / 1.2	4 / .8	1 / .2			35 / 7.3
10 / 9.4–9.5								2 / .4	11 / 2.2	5 / 1.0	9 / 1.8	11 / 2.2	15 / 3.1	7 / 1.4	2 / .4	3 / .6	4 / .8		69 / 14.1
9 / 9.2–9.3							1 / .2	6 / 1.2	8 / 1.6	10 / 2.0	14 / 2.9	8 / 1.6	8 / 1.6	4 / .8	7 / 1.4	1 / .2	1 / .2		68 / 13.9
8 / 9.0–9.1					2 / .4	4 / .8	4 / .8	13 / 2.7	17 / 3.5	21 / 4.3	22 / 4.5	18 / 3.7	13 / 2.7		2 / .4	1 / .2	1 / .2		118 / 24.1
7 / 8.8–8.9		1 / .2					2 / .4	4 / .8	1 / .2	4 / .8	13 / 2.7	10 / 2.0	8 / 1.6	9 / 1.8	3 / .6	2 / .4	1 / .2		58 / 11.8
6 / 8.6–8.7							1 / .2	2 / .4	9 / 1.8	4 / .8	9 / 1.8	5 / 1.0	3 / .6	4 / .8	1 / .2	2 / .4			40 / 8.2
5 / 8.4–8.5				1 / .2			3 / .6	5 / 1.0	5 / 1.0	3 / .6	5 / 1.0	8 / 1.6	2 / .4	1 / .2	1 / .2				34 / 6.9
4 / 8.2–8.3							2 / .4		3 / .6	3 / .6	3 / .6	1 / .2	1 / .2		1 / .2				14 / 2.9
3 / 8.0–8.1			1 / .2					1 / .2			1 / .2								3 / .6
1 / 7.6–7.7	1 / .2																		1 / .2
COLUMN TOTAL	1 / .2	1 / .2	1 / .2	1 / .2	10 / 2.0	17 / 3.5	31 / 6.3	49 / 10.0	67 / 13.7	76 / 15.5	63 / 12.9	68 / 13.9	46 / 9.4	27 / 5.5	19 / 3.9	8 / 1.6	4 / .8	1 / .2	490 / 100.0

Table 50. Female Bivariate Table of BOF Breadth, Horiz, Right (VAR 26) and Foot Length, Right (VAR 25)

VAR13

VAR16	17.0-17.4	17.5-17.9	18.0-18.4	18.5-18.9	19.0-19.4	19.5-19.9	20.0-20.4	20.5-20.9	21.0-21.4	21.5-21.9	22.0-22.4	22.5-22.9	23.0-23.4	23.5-23.9	24.0-24.4	25.0-25.4	ROW TOTAL
17 / 26.5-26.9																1 / .2	1 / .2
16 / 26.0-26.4										1 / .2				1 / .2			2 / .4
15 / 25.5-25.9										1 / .2							1 / .2
14 / 25.0-25.4									2 / .4	2 / .4	1 / .2			1 / .2			6 / 1.2
13 / 24.5-24.9									2 / .4	2 / .4	3 / .6	5 / 1.0	1 / .2				13 / 2.7
12 / 24.0-24.4						1 / .2	1 / .2	2 / .4	3 / .6	8 / 1.6	4 / .8	7 / 1.4	3 / .6	1 / .2	1 / .2	1 / .2	32 / 6.6
11 / 23.5-23.9		1 / .2				1 / .2	4 / .8	7 / 1.4	17 / 3.5	11 / 2.3	8 / 1.6	5 / 1.0	3 / .6	2 / .4	1 / .2		60 / 12.3
10 / 23.0-23.4						3 / .6	11 / 2.3	13 / 2.7	15 / 3.1	11 / 2.3	8 / 1.6	6 / 1.2		1 / .2			68 / 13.9
9 / 22.5-22.9				2 / .4	3 / .6	10 / 2.0	19 / 3.9	21 / 4.3	16 / 3.3	13 / 2.7	4 / .8	1 / .2					89 / 18.2
8 / 22.0-22.4				3 / .6	11 / 2.3	12 / 2.5	20 / 4.1	15 / 3.1	13 / 2.7	16 / 3.3	4 / .8	1 / .2	1 / .2				96 / 19.7
7 / 21.5-21.9				4 / .8	8 / 1.6	8 / 1.6	13 / 2.7	6 / 1.2	14 / 2.9	7 / 1.4			1 / .2				61 / 12.5
6 / 21.0-21.4				3 / .6	7 / 1.4	9 / 1.8	11 / 2.3	4 / .8	5 / 1.0			1 / .2	1 / .2				41 / 8.4
5 / 20.5-20.9			1 / .2	2 / .4	2 / .4	3 / .6	1 / .2	2 / .4									11 / 2.3
4 / 20.0-20.4	1 / .2			1 / .2	1 / .2	2 / .4	1 / .2										6 / 1.2
1 / 18.5-18.9				1 / .2													1 / .2
COLUMN TOTAL	1 / .2	1 / .2	2 / .4	16 / 3.3	34 / 7.0	48 / 9.8	81 / 16.6	73 / 15.0	92 / 18.9	69 / 14.1	38 / 7.8	19 / 3.9	7 / 1.4	4 / .8	2 / .4	1 / .2	488 / 100.0

Table 51. Female Bivariate Table of BOF Circumference, Right (VAR 16) and Ankle Circumference (VAR 13)

VAR16

VAR26	18.5–18.9 (1)	20.0–20.4 (4)	20.5–20.9 (5)	21.0–21.4 (6)	21.5–21.9 (7)	22.0–22.4 (8)	22.5–22.9 (9)	23.0–23.4 (10)	23.5–23.9 (11)	24.0–24.4 (12)	24.5–24.9 (13)	25.0–25.4 (14)	25.5–25.9 (15)	26.0–26.4 (16)	26.5–26.9 (17)	ROW TOTAL
16 / 10.6–10.7														1 (.2)		1 (.2)
15 / 10.4–10.5											1 (.2)	1 (.2)				2 (.4)
14 / 10.2–10.3										2 (.4)	2 (.4)	1 (.2)		1 (.2)		6 (1.2)
13 / 10.0–10.1									5 (1.0)	4 (.8)	2 (.4)	2 (.4)				13 (2.7)
12 / 9.8–9.9								4 (.8)	9 (1.8)	5 (1.0)	4 (.8)	3 (.6)	1 (.2)		1 (.2)	27 (5.5)
11 / 9.6–9.7							4 (.8)	4 (.8)	14 (2.9)	11 (2.2)	2 (.4)					35 (7.2)
10 / 9.4–9.5				1 (.2)	2 (.4)	5 (1.0)	14 (2.9)	23 (4.7)	16 (3.3)	6 (1.2)	2 (.4)					69 (14.1)
9 / 9.2–9.3					4 (.8)	11 (2.2)	18 (3.7)	20 (4.1)	13 (2.7)	2 (.4)						68 (13.9)
8 / 9.0–9.1			1 (.2)	6 (1.2)	14 (2.9)	39 (8.0)	39 (8.0)	16 (3.3)	2 (.4)	1 (.2)						118 (24.1)
7 / 8.8–8.9				5 (1.0)	16 (3.3)	26 (5.3)	9 (1.8)	2 (.4)								58 (11.9)
6 / 8.6–8.7			2 (.4)	6 (1.2)	18 (3.7)	10 (2.0)	3 (.6)	1 (.2)								40 (8.2)
5 / 8.4–8.5		3 (.6)	4 (.8)	17 (3.5)	5 (1.0)	3 (.6)	2 (.4)									34 (7.0)
4 / 8.2–8.3		1 (.2)	3 (.6)	6 (1.2)	2 (.4)	1 (.2)	1 (.2)									14 (2.9)
3 / 8.0–8.1		2 (.4)	1 (.2)													3 (.6)
1 / 7.6–7.7	1 (.2)															1 (.2)
COLUMN TOTAL	1 (.2)	6 (1.2)	11 (2.2)	41 (8.4)	61 (12.5)	95 (19.4)	90 (18.4)	68 (13.9)	61 (12.5)	32 (6.5)	13 (2.7)	6 (1.2)	1 (.2)	2 (.4)	1 (.2)	489 (100.0)

Table 52.   Female Bivariate Table of BOF Breadth, Horiz, Right (VAR 26) and BOF Circ, Right (VAR 16)

VAR25

VAR16	19.0-19.4 (1)	20.0-20.4 (3)	20.5-20.9 (4)	21.0-21.4 (5)	21.5-21.9 (6)	22.0-22.4 (7)	22.5-22.9 (8)	23.0-23.4 (9)	23.5-23.9 (10)	24.0-24.4 (11)	24.5-24.9 (12)	25.0-25.4 (13)	25.5-25.9 (14)	26.0-26.4 (15)	26.5-26.9 (16)	27.0-27.4 (17)	27.5-27.9 (18)	28.5-28.9 (20)	ROW TOTAL
17 26.5-26.9														1 .2					1 .2
16 26.0-26.4																1 .2	1 .2		2 .4
15 25.5-25.9														1 .2					1 .2
14 25.0-25.4											1 .2	1 .2	1 .2		1 .2	1 .2	1 .2		6 1.2
13 24.5-24.9									2 .4		1 .2	2 .4	3 .6	3 .6	1 .2	1 .2			13 2.7
12 24.0-24.4								1 .2	2 .4	2 .4	4 .8	5 1.0	9 1.8	3 .6	5 1.0	1 .2			32 6.5
11 23.5-23.9							2 .4	3 .6	3 .6	9 1.8	6 1.2	13 2.7	10 2.0	9 1.8	4 .8	2 .4			61 12.4
10 23.0-23.4							1 .2	4 .8	4 .8	14 2.9	14 2.9	14 2.9	8 1.6	2 .4	3 .6	3 .6		1 .2	68 13.9
9 22.5-22.9						1 .2	6 1.2	10 2.0	16 3.3	17 3.5	14 2.9	12 2.4	10 2.0	3 .6	1 .2				90 18.4
8 22.0-22.4					2 .4	2 .4	6 1.2	12 2.4	18 3.7	19 3.9	14 2.9	15 3.1	4 .8	2 .4	2 .4				96 19.6
7 21.5-21.9		1 .2			2 .4	5 1.0	6 1.2	12 2.4	11 2.2	9 1.8	6 1.2	6 1.2	1 .2	2 .4					61 12.4
6 21.0-21.4					3 .6	6 1.2	8 1.6	5 1.0	9 1.8	7 1.4	2 .4		1 .2						41 8.4
5 20.5-20.9					1 .2	3 .6	2 .4	1 .2	1 .2		2 .4	1 .2							11 2.2
4 20.0-20.4			1 .2	1 .2	2 .4			1 .2	1 .2										6 1.2
1 18.5-18.9	1 .2																		1 .2
COLUMN TOTAL	1 .2	1 .2	1 .2	1 .2	10 2.0	17 3.5	31 6.3	49 10.0	67 13.7	77 15.7	63 12.9	68 13.9	46 9.4	26 5.3	19 3.9	8 1.6	4 .8	1 .2	490 100.0

211

Table 53. Female Bivariate Table of BOF Circumference, Right (VAR 16) and Foot Length, Right (VAR 25)

VAR15

VAR16	18.5-18.9 (1)	20.0-20.4 (4)	20.5-20.9 (5)	21.0-21.4 (6)	21.5-21.9 (7)	22.0-22.4 (8)	22.5-22.9 (9)	23.0-23.4 (10)	23.5-23.9 (11)	24.0-24.4 (12)	24.5-24.9 (13)	25.0-25.4 (14)	25.5-25.9 (15)	26.5-26.9 (17)	27.0-27.4 (18)	ROW TOTAL
17 / 26.5-26.9															1 / .2	1 / .2
16 / 26.0-26.4													1 / .2	1 / .2		2 / .4
15 / 25.5-25.9													1 / .2			1 / .2
14 / 25.0-25.4											4 / .8	1 / .2	1 / .2			6 / 1.2
13 / 24.5-24.9										1 / .2	3 / .6	4 / .8	5 / 1.0			13 / 2.7
12 / 24.0-24.4								1 / .2	3 / .6	8 / 1.6	11 / 2.3	6 / 1.2	2 / .4			31 / 6.4
11 / 23.5-23.9							3 / .6	8 / 1.6	12 / 2.5	17 / 3.5	15 / 3.1	6 / 1.2				61 / 12.5
10 / 23.0-23.4					2 / .4	1 / .2	4 / .8	16 / 3.3	22 / 4.5	20 / 4.1	3 / .6					68 / 13.9
9 / 22.5-22.9						2 / .4	15 / 3.1	33 / 6.8	26 / 5.3	7 / 1.4	4 / .8	2 / .4				89 / 18.2
8 / 22.0-22.4					3 / .6	17 / 3.5	34 / 7.0	28 / 5.7	10 / 2.0	4 / .8						96 / 19.7
7 / 21.5-21.9				1 / .2	8 / 1.6	16 / 3.3	19 / 3.9	13 / 2.7	1 / .2	3 / .6						61 / 12.5
6 / 21.0-21.4			1 / .2	5 / 1.0	13 / 2.7	8 / 1.6	10 / 2.0	3 / .6	1 / .2							41 / 8.4
5 / 20.5-20.9				2 / .4	5 / 1.0	2 / .4	1 / .2	1 / .2								11 / 2.3
4 / 20.0-20.4		1 / .2		4 / .8	1 / .2											6 / 1.2
1 / 18.5-18.9	1 / .2															1 / .2
COLUMN TOTAL	1 / .2	1 / .2	1 / .2	12 / 2.5	32 / 6.6	46 / 9.4	86 / 17.6	103 / 21.1	75 / 15.4	60 / 12.3	40 / 8.2	19 / 3.9	10 / 2.0	1 / .2	1 / .2	488 / 100.0

Table 54. Female Bivariate Table of BOF Circumference, Right (VAR 16) and Instep Circumference (VAR 15)

212

VAR16 \ VAR21	42.5-44.9 (1)	45.0-47.4 (2)	47.5-49.9 (3)	50.0-52.4 (4)	52.5-54.9 (5)	55.0-57.4 (6)	57.5-59.9 (7)	60.0-62.4 (8)	62.5-64.9 (9)	65.0-67.4 (10)	67.5-69.9 (11)	70.0-72.4 (12)	72.5-74.9 (13)	75.0-77.4 (14)	77.5-79.9 (15)	80.0-82.4 (16)	87.5-89.9 (19)	ROW TOTAL
17 26.5-26.9																	1 .2	1 .2
16 26.0-26.4													1 .2	1 .2				2 .4
15 25.5-25.9									1 .2									1 .2
14 25.0-25.4											1 .2		2 .4	2 .4	1 .2			6 1.2
13 24.5-24.9								2 .4	2 .4	2 .4	1 .2	4 .8	2 .4					13 2.7
12 24.0-24.4					1 .2	1 .2	2 .4		5 1.0	6 1.2	7 1.4	6 1.2	2 .4	2 .4				32 6.5
11 23.5-23.9				1 .2	1 .2	2 .4	2 .4	10 2.0	10 2.0	8 1.6	10 2.0	9 1.8	5 1.0	1 .2		1 .2	1 .2	61 12.5
10 23.0-23.4			2 .4	1 .2	4 .8	9 1.8	10 2.0	14 2.9	11 2.2	9 1.8	4 .8	1 .2	1 .2	1 .2	1 .2		1 .1	68 13.9
9 22.5-22.9				1 .2	3 .6	7 1.4	12 2.5	17 3.5	17 3.5	10 2.0	14 2.9	4 .8	1 .2	2 .4	1 .2			89 18.2
8 22.0-22.4				3 .6	7 1.4	14 2.9	16 3.3	26 5.3	14 2.9	11 2.2	3 .6	1 .2	1 .2					96 19.6
7 21.5-21.9	1 .2	2 .4	5 1.0	7 1.4	6 1.2	10 2.0	14 2.9	7 1.4	6 1.2		2 .4	1 .2						61 12.5
6 21.0-21.4		4 .8	2 .4	6 1.2	6 1.2	7 1.4	8 1.6	4 .8	3 .6		1 .2							41 8.4
5 20.5-20.9		2 .4	2 .4	4 .8	1 .2	1 .2	1 .2											11 2.2
4 20.0-20.4			1 .2	1 .2	2 .4	1 .2		1 .2										6 1.2
1 18.5-18.9		1 .2																1 .2
COLUMN TOTAL	1 .2	9 1.8	17 3.5	31 6.3	43 8.8	60 12.3	86 17.6	74 15.1	58 11.9	46 9.4	28 5.7	15 3.1	11 2.2	6 1.2	2 .4	1 .2	1 .2	489 100.0

Table 55.   Female Bivariate Table of BOF Circumference, Right (VAR 16) and Weight (VAR 21)

VAR24	17.0-17.4 (1)	17.5-17.9 (2)	18.0-18.4 (3)	18.5-18.9 (4)	19.0-19.4 (5)	19.5-19.9 (6)	20.0-20.4 (7)	20.5-20.9 (8)	21.0-21.4 (9)	21.5-21.9 (10)	22.0-22.4 (11)	22.5-22.9 (12)	23.0-23.4 (13)	23.5-23.9 (14)	24.0-24.4 (15)	25.0-25.4 (17)	ROW TOTAL
18 20.5-20.9														1 .2			1 .2
17 20.0-20.4						1 .2		1 .2	1 .2	2 .4	2 .4		1 .2	1 .2			8 1.6
16 19.5-19.9						1 .2	1 .2	5 1.0	5 1.0	3 .6	3 .6						18 3.7
15 19.0-19.4						1 .2	3 .6	5 1.0	3 .6	13 2.7	7 1.4	8 1.6	3 .6		1 .2	1 .2	45 9.2
14 18.5-18.9				2 .4	1 .2	3 .6	5 1.0	16 3.3	17 3.5	4 .8	2 .4	5 1.0					55 11.3
13 18.0-18.4		1 .2	1 .2	1 .2	6 1.2	5 1.0	16 3.3	16 3.3	12 2.5	12 2.5	8 1.6	4 .8	2 .4	2 .4			86 17.6
12 17.5-17.9				2 .4	6 1.2	9 1.8	14 2.9	11 2.7	15 3.1	13 2.7	7 1.4	2 .4		1 .2			80 16.4
11 17.0-17.4				4 .8	7 1.4	16 3.3	15 3.1	10 2.0	13 2.7	20 4.1	4 .8	4 .8	2 .4		1 .2		96 19.7
10 16.5-16.9				2 .4	5 1.0	4 .8	12 2.5	6 1.2	7 1.4	3 .6	2 .4						41 8.4
9 16.0-16.4			1 .2	3 .6	3 .6	2 .4	9 1.8	3 .6	8 1.6	6 1.2	2 .4	1 .2	1 .2				39 8.0
8 15.5-15.9	1 .2				2 .4	3 .6	2 .4	3 .6	1 .2								12 2.5
7 15.0-15.4				1 .2	2 .4		1 .2										4 .8
6 14.5-14.9						1 .2											1 .2
5 14.0-14.4				1 .2													1 .2
1 12.0-12.4						1 .2											1 .2
COLUMN TOTAL	1 .2	1 .2	2 .4	16 3.3	34 7.0	48 9.8	81 16.6	73 15.0	92 18.9	69 14.1	38 7.8	19 3.9	7 1.4	4 .8	2 .4	1 .2	488 100.0

Table 56. Female Bivariate Table of BOF Length, Right (VAR 24) and Ankle Circumference (VAR 13)

VAR24

VAR26	12.0-12.4 (1)	14.0-14.4 (5)	14.5-14.9 (6)	15.0-15.4 (7)	15.5-15.9 (8)	16.0-16.4 (9)	16.5-16.9 (10)	17.0-17.4 (11)	17.5-17.9 (12)	18.0-18.4 (13)	18.5-18.9 (14)	19.0-19.4 (15)	19.5-19.9 (16)	20.0-20.4 (17)	20.5-20.9 (18)	ROW TOTAL
16 / 10.6-10.7													1 / .2			1 / .2
15 / 10.4-10.5										1 / .2	1 / .2					2 / .4
14 / 10.2-10.3								2 / .4		1 / .2	1 / .2	1 / .2			1 / .2	6 / 1.2
13 / 10.0-10.1							1 / .2	1 / .2			1 / .2	4 / .8	5 / 1.0	1 / .2		13 / 2.7
12 / 9.8-9.9								1 / .2	8 / 1.6	4 / .8	3 / .6	6 / 1.2	3 / .6	2 / .4		27 / 5.5
11 / 9.6-9.7						1 / .2	2 / .4	2 / .4	7 / 1.4	6 / 1.2	5 / 1.0	11 / 2.2	2 / .4			36 / 7.4
10 / 9.4-9.5						2 / .4	8 / 1.6	16 / 3.3	10 / 2.0	10 / 2.0	9 / 1.8	6 / 1.2	4 / .8	3 / .6		68 / 13.9
9 / 9.2-9.3						6 / 1.2	3 / .6	22 / 4.5	14 / 2.9	9 / 1.8	8 / 1.6	2 / .4	2 / .4	2 / .4		68 / 13.9
8 / 9.0-9.1					1 / .2	4 / .8	9 / 1.8	10 / 2.0	21 / 4.3	19 / 3.9	31 / 6.3	12 / 2.5	8 / 1.6	2 / .4	1 / .2	118 / 24.1
7 / 8.8-8.9				1 / .2	1 / .2	2 / .4	4 / .8	4 / .8	9 / 1.8	11 / 2.2	14 / 2.9	9 / 1.8	1 / .2	2 / .4		58 / 11.9
6 / 8.6-8.7					1 / .2	8 / 1.6	6 / 1.2	9 / 1.8	5 / 1.0	5 / 1.0	2 / .4	3 / .6	1 / .2			40 / 8.2
5 / 8.4-8.5					1 / .2	4 / .8	5 / 1.0	6 / 1.2	8 / 1.6	4 / .8	4 / .8		2 / .4			34 / 7.0
4 / 8.2-8.3	1 / .2						3 / .6	2 / .4	4 / .8	3 / .6		1 / .2				14 / 2.9
3 / 8.0-8.1				1 / .2	1 / .2				1 / .2							3 / .6
1 / 7.6-7.7		1 / .2														1 / .2
COLUMN TOTAL	1 / .2	1 / .2	1 / .2	4 / .8	12 / 2.5	39 / 8.0	41 / 8.4	96 / 19.6	81 / 16.6	86 / 17.6	55 / 11.2	45 / 9.2	18 / 3.7	8 / 1.6	1 / .2	489 / 100.0

Table 57. Female Bivariate Table of BOF Breadth, Horiz, Right (VAR 26) and BOF Length, Right (VAR 24)

215

VAR24

VAR16	12.0-12.4 (1)	14.0-14.4 (5)	14.5-14.9 (6)	15.0-15.4 (7)	15.5-15.9 (8)	16.0-16.4 (9)	16.5-16.9 (10)	17.0-17.4 (11)	17.5-17.9 (12)	18.0-18.4 (13)	18.5-18.9 (14)	19.0-19.4 (15)	19.5-19.9 (16)	20.0-20.4 (17)	20.5-20.9 (18)	ROW TOTAL
17 26.5-26.9													1 .2			1 .2
16 26.0-26.4													1 .2		1 .2	2 .4
15 25.5-25.9													1 .2			1 .2
14 25.0-25.4									1 .2		1 .2	2 .4	1 .2	1 .2		6 1.2
13 24.5-24.9								2 .4		3 .6	1 .2	4 .8	1 .2	2 .4		13 2.7
12 24.0-24.4						1 .2		4 .8	3 .6	6 1.2	6 1.2	6 1.2	5 1.0	1 .2		32 6.5
11 23.5-23.9						2 .4	1 .2	11 2.2	9 1.8	10 2.0	14 2.9	11 2.2	2 .4	1 .2		61 12.5
10 23.0-23.4						2 .4	1 .2	11 2.2	18 3.7	11 2.2	10 2.0	10 2.0	3 .6	1 .2		67 13.7
9 22.5-22.9					2 .4	6 1.2	8 1.6	18 3.7	22 4.5	15 3.1	14 2.9	2 .4	2 .4	1 .2		90 18.4
8 22.0-22.4				1 .2	1 .2	6 1.2	11 2.2	25 5.1	11 2.2	29 5.9	6 1.2	4 .8	1 .2	1 .2		96 19.6
7 21.5-21.9			1 .2	1 .2	3 .6	8 1.6	11 2.2	13 2.7	9 1.8	9 1.8	2 .4	3 .6	1 .2			61 12.5
6 21.0-21.4	1 .2				1 .2	11 2.2	8 1.6	10 2.0	6 1.2	2 .4	1 .2	1 .2				41 8.4
5 20.5-20.9						4 .8	2 .4	1 .2	1 .2	2 .4	1 .2					11 2.2
4 20.0-20.4				2 .4	1 .2	1 .2			1 .2	1 .2						6 1.2
1 18.5-18.9		1 .2														1 .2
COLUMN TOTAL	1 .2	1 .2	1 .2	4 .8	12 2.5	39 8.0	41 8.4	96 19.6	82 16.8	86 17.6	55 11.2	44 9.0	18 3.7	8 1.6	1 .2	489 100.0

Table 58. Female Bivariate Table of BOF Circumference, Right (VAR 16) and BOF Length, Right (VAR 24)

VAR25

VAR24	19.0-19.4 (1)	20.0-20.4 (3)	20.5-20.9 (4)	21.0-21.4 (5)	21.5-21.9 (6)	22.0-22.4 (7)	22.5-22.9 (8)	23.0-23.4 (9)	23.5-23.9 (10)	24.0-24.4 (11)	24.5-24.9 (12)	25.0-25.4 (13)	25.5-25.9 (14)	26.0-26.4 (15)	26.5-26.9 (16)	27.0-27.4 (17)	27.5-27.9 (18)	28.5-28.9 (20)	ROW TOTAL
18 / 20.5-20.9																		1 / .2	1 / .2
17 / 20.0-20.4														1 / .2	2 / .4	4 / .8	1 / .2		8 / 1.6
16 / 19.5-19.9										1 / .2			3 / .6	5 / 1.0	5 / 1.0	1 / .2	3 / .6		18 / 3.7
15 / 19.0-19.4												10 / 2.0	7 / 1.4	13 / 2.7	12 / 2.4	3 / .6			45 / 9.2
14 / 18.5-18.9											1 / .2	8 / 1.6	20 / 4.1	19 / 3.9	7 / 1.4				55 / 11.2
13 / 18.0-18.4										1 / .2	15 / 3.1	26 / 5.3	27 / 5.5	16 / 3.3	1 / .2				86 / 17.6
12 / 17.5-17.9									5 / 1.0	14 / 2.9	31 / 6.3	22 / 4.5	9 / 1.8	1 / .2					82 / 16.7
11 / 17.0-17.4								3 / .6	16 / 3.3	42 / 8.6	27 / 5.5	6 / 1.2	2 / .4						96 / 19.6
10 / 16.5-16.9							2 / .4	13 / 2.7	17 / 3.5	8 / 1.6	1 / .2								41 / 8.4
9 / 16.0-16.4						4 / .8	9 / 1.8	14 / 2.9	9 / 1.8	2 / .4	1 / .2								39 / 8.0
8 / 15.5-15.9					1 / .2	3 / .6	6 / 1.2	1 / .2	1 / .2										12 / 2.4
7 / 15.0-15.4			1 / .2			3 / .6													4 / .8
6 / 14.5-14.9		1 / .2																	1 / .2
5 / 14.0-14.4	1 / .2																		1 / .2
1 / 12.0-12.4								1 / .2											1 / .2
COLUMN TOTAL	1 / .2	1 / .2	1 / .2	1 / .2	10 / 2.0	17 / 3.5	31 / 6.3	49 / 10.0	67 / 13.7	76 / 15.5	63 / 12.9	68 / 13.9	46 / 9.4	27 / 5.5	19 / 3.9	8 / 1.6	4 / .8	2 / .2	490 / 100.0

Table 59. Female Bivariate Table of BOF Length, Right (VAR 24) and Foot Length, Right (VAR 25)

VAR24

VAR17	12.0-12.4 (1)	14.0-14.4 (5)	14.5-14.9 (6)	15.0-15.4 (7)	15.5-15.9 (8)	16.0-16.4 (9)	16.5-16.9 (10)	17.0-17.4 (11)	17.5-17.9 (12)	18.0-18.4 (13)	18.5-18.9 (14)	19.0-19.4 (15)	19.5-19.9 (16)	20.0-20.4 (17)	20.5-20.9 (18)	ROW TOTAL
14 / 7.8-7.9									1 / .2							1 / .2
13 / 7.6-7.7														1 / .2		1 / .2
12 / 7.4-7.5						1 / .2					2 / .4	3 / .6	3 / .6			9 / 1.8
11 / 7.2-7.3								2 / .4		2 / .4	2 / .4	5 / 1.0	2 / .4	1 / .2		14 / 2.9
10 / 7.0-7.1								1 / .2		2 / .4	4 / .8	7 / 1.4	2 / .4	1 / .2		17 / 3.5
9 / 6.8-6.9					1 / .2			4 / .8	3 / .6	13 / 2.7	4 / .8	6 / 1.2	2 / .4	1 / .2	1 / .2	35 / 7.2
8 / 6.6-6.7						1 / .2	2 / .4	11 / 2.2	8 / 1.6	10 / 2.0	12 / 2.5	9 / 1.8	2 / .4	1 / .2		56 / 11.5
7 / 6.4-6.5					1 / .2	4 / .8	3 / .6	17 / 3.5	15 / 3.1	21 / 4.3	12 / 2.5	6 / 1.2	2 / .4	3 / .6		84 / 17.2
6 / 6.2-6.3	1 / .2		1 / .2		1 / .2	5 / 1.0	8 / 1.6	34 / 7.0	20 / 4.1	10 / 2.0	8 / 1.6	5 / 1.0	2 / .4			95 / 19.4
5 / 6.0-6.1				2 / .4	5 / 1.0	15 / 3.1	14 / 2.9	17 / 3.5	21 / 4.3	17 / 3.5	7 / 1.4	3 / .6	2 / .4			103 / 21.1
4 / 5.8-5.9				2 / .4	1 / .2	6 / 1.2	9 / 1.8	5 / 1.0	8 / 1.6	9 / 1.8	2 / .4	1 / .2	1 / .2			44 / 9.0
3 / 5.6-5.7					3 / .6	5 / 1.0	5 / 1.0	2 / .4	6 / 1.2	2 / .4	2 / .4					25 / 5.1
2 / 5.4-5.5						2 / .4		2 / .4								4 / .8
1 / 5.2-5.3			1 / .2													1 / .2
COLUMN TOTAL	1 / .2	1 / .2	1 / .2	4 / .9	12 / 2.5	39 / 8.0	41 / 8.4	95 / 19.4	82 / 16.8	86 / 17.6	55 / 11.2	45 / 9.2	18 / 3.7	8 / 1.6	1 / .2	489 / 100.0

Table 60. Female Bivariate Table of Heel Breadth, Right (VAR 17) and BOF Length, Right (VAR 24)

218

VAR24

VAR15	12.0-12.4 (1)	14.0-14.4 (5)	14.5-14.9 (6)	15.0-15.4 (7)	15.5-15.9 (8)	16.0-16.4 (9)	16.5-16.9 (10)	17.0-17.4 (11)	17.5-17.9 (12)	18.0-18.4 (13)	18.5-18.9 (14)	19.0-19.4 (15)	19.5-19.9 (16)	20.0-20.4 (17)	20.5-20.9 (18)	ROW TOTAL
18 / 27.0-27.4												1 / .2				1 / .2
17 / 26.5-26.9													1 / .2			1 / .2
15 / 25.5-25.9												3 / .6	3 / .6	3 / .6	1 / .2	10 / 2.0
14 / 25.0-25.4										3 / .6	5 / 1.0	5 / 1.0	5 / 1.0	1 / .2	1 / .2	20 / 4.1
13 / 24.5-24.9							1 / .2	1 / .2	5 / 1.0	4 / .8	4 / .8	9 / 1.8	11 / 2.3	5 / 1.0		40 / 8.2
12 / 24.0-24.4								1 / .2	13 / 2.7	7 / 1.4	9 / 1.8	10 / 2.0	12 / 2.5	5 / 1.0	2 / .4	59 / 12.1
11 / 23.5-23.9					2 / .4	5 / 1.0	2 / .4	15 / 3.1	15 / 3.1	22 / 4.5	11 / 2.3	2 / .4	1 / .2			75 / 15.4
10 / 23.0-23.4						7 / 1.4	6 / 1.2	23 / 4.7	22 / 4.5	23 / 4.7	13 / 2.7	6 / 1.2	2 / .4	1 / .2		103 / 21.1
9 / 22.5-22.9				1 / .2	1 / .2	8 / 1.6	16 / 3.3	19 / 3.9	16 / 3.3	16 / 3.3	5 / 1.0	4 / .8				86 / 17.6
8 / 22.0-22.4	1 / .2			1 / .2	2 / .4	6 / 1.2	7 / 1.4	13 / 2.7	8 / 1.6	6 / 1.2	2 / .4					46 / 9.4
7 / 21.5-21.9					4 / .8	8 / 1.6	5 / 1.0	7 / 1.4	6 / 1.2	1 / .2		1 / .2				32 / 6.6
6 / 21.0-21.4				3 / .6	2 / .4	3 / .6	2 / .4	1 / .2	1 / .2							12 / 2.5
5 / 20.5-20.9						1 / .2										1 / .2
4 / 20.0-20.4					1 / .2											1 / .2
1 / 18.5-18.9		1 / .2														1 / .2
COLUMN TOTAL	1 / .2	1 / .2	1 / .2	4 / .8	12 / 2.5	39 / 8.0	40 / 8.2	96 / 19.7	82 / 16.8	86 / 17.6	55 / 11.3	45 / 9.2	18 / 3.7	7 / 1.4	1 / .2	488 / 100.0

Table 61.   Female Bivariate Table of Instep Circ (VAR 15)
and BOF Length, Right (VAR 24)

219

Table 62 — Female Bivariate Table of BOF Length, Right (VAR 24) and Stature (VAR 1). Cell entries show count (top) and percent (bottom). Values are an approximate reading of a low-resolution table.

VAR24	141.0–142.9 (1)	143.0–144.9 (2)	147.0–148.9 (4)	149.0–150.9 (5)	151.0–152.9 (6)	153.0–154.9 (7)	155.0–156.9 (8)	157.0–158.9 (9)	159.0–160.9 (10)	161.0–162.9 (11)	163.0–164.9 (12)	165.0–166.9 (13)	167.0–168.9 (14)	169.0–170.9 (15)	171.0–172.9 (16)	173.0–174.9 (17)	175.0–176.9 (18)	177.0–178.9 (19)	ROW TOTAL
18 / 20.5–20.9																1 / .2			1 / .2
17 / 20.0–20.4									1 / .2			2 / .4	1 / .2	2 / .4		1 / .2	1 / .2		8 / 1.6
16 / 19.5–19.9								1 / .2		3 / .6	2 / .4	1 / .2	3 / .6	2 / .4	4 / .8	2 / .4			18 / 3.7
15 / 19.0–19.4							1 / .2		5 / 1.0	1 / .2	6 / 1.2	7 / 1.4	5 / 1.0	5 / 1.0	6 / 1.2	4 / .8	3 / .6	2 / .4	45 / 9.7
14 / 18.5–18.9						1 / .2	1 / .2	3 / .6	6 / 1.2	7 / 1.4	5 / 1.0	9 / 1.8	9 / 1.8	10 / 2.0	3 / .6			1 / .2	55 / 11.2
13 / 18.0–18.4				1 / .2		2 / .4	4 / .8	9 / 1.8	11 / 2.2	17 / 3.5	14 / 2.9	13 / 2.7	6 / 1.2	2 / .4	3 / .6	2 / .4	2 / .4		86 / 17.6
12 / 17.5–17.9				1 / .2	1 / .2	4 / .8	8 / 1.6	12 / 2.4	13 / 2.7	8 / 1.6	13 / 2.7	9 / 1.8	8 / 1.6		2 / .4	1 / .2	1 / .2	1 / .2	82 / 16.7
11 / 17.0–17.4			1 / .2	2 / .4	5 / 1.0	10 / 2.0	15 / 3.1	13 / 2.7	14 / 2.9	12 / 2.4	7 / 1.4	10 / 2.0	5 / 1.0	1 / .2	1 / .2				96 / 19.6
10 / 16.5–16.9				4 / .8	2 / .4	3 / .6	8 / 1.6	9 / 1.8	6 / 1.2	4 / .8	1 / .2		2 / .4		2 / .4				41 / 8.4
9 / 16.0–16.4			1 / .2	3 / .6	8 / 1.6	4 / .8	7 / 1.4	7 / 1.4	1 / .2	4 / .8	1 / .2	2 / .4							39 / 8.0
8 / 15.5–15.9			1 / .2	2 / .4	5 / 1.0	2 / .4			1 / .2	1 / .2									12 / 2.4
7 / 15.0–15.4		1 / .2	1 / .2		1 / .2	1 / .2													4 / .8
6 / 14.5–14.9	1 / .2																		1 / .2
5 / 14.0–14.4	1 / .2																		1 / .2
1 / 12.0–12.4						1 / .2													1 / .2
COLUMN TOTAL	2 / .4	1 / .2	4 / .8	13 / 2.7	23 / 4.7	27 / 5.5	45 / 9.2	53 / 10.8	58 / 11.8	54 / 11.0	51 / 10.4	54 / 11.0	37 / 7.6	23 / 4.7	19 / 3.9	13 / 2.7	9 / 1.8	4 / .8	490 / 100.0

Table 62.   Female Bivariate Table of BOF Length, Right (VAR 24) and Stature (VAR 1)

VAR13

VAR12	17.0–17.4 (1)	17.5–17.9 (2)	18.0–18.4 (3)	18.5–18.9 (4)	19.0–19.4 (5)	19.5–19.9 (6)	20.0–20.4 (7)	20.5–20.9 (8)	21.0–21.4 (9)	21.5–21.9 (10)	22.0–22.4 (11)	22.5–22.9 (12)	23.0–23.4 (13)	23.5–23.9 (14)	24.0–24.4 (15)	25.0–25.4 (17)	ROW TOTAL
16 / 44.0–44.9															1 .2		1 .2
13 / 41.0–41.9												1 .2					1 .2
12 / 40.0–40.9											1 .2	2 .4	1 .2				4 .8
11 / 39.0–39.9											2 .4		1 .2	2 .4			5 1.0
10 / 38.0–38.9								1 .2	6 1.2	11 2.3	6 1.2	2 .4	1 .2		1 .2		28 5.7
9 / 37.0–37.9						2 .4	2 .4	7 1.4	14 2.9	15 3.1	15 3.1	5 1.0	2 .4	1 .2	1 .2		64 13.1
8 / 36.0–36.9					1 .2	5 1.0	5 1.0	15 3.1	18 3.7	17 3.5	8 1.6	5 1.0	2 .4				76 15.6
7 / 35.0–35.9					1 .2	4 .8	14 2.9	17 3.5	24 4.9	11 2.3	7 1.4	2 .4	1 .2				81 16.6
6 / 34.0–34.9			1 .2	1 .2	4 .8	11 2.3	25 5.1	17 3.5	19 3.9	12 2.5	1 .2			1 .2			92 18.9
5 / 33.0–33.9				4 .8	9 1.8	14 2.9	21 4.3	8 1.6	7 1.4								63 12.9
4 / 32.0–32.9				6 1.2	12 2.5	9 1.8	8 1.6	6 1.2	4 .8	2 .4		1 .2					48 9.8
3 / 31.0–31.9		1 .2	1 .2	4 .8	4 .8	2 .4	5 1.0	1 .2									18 3.7
2 / 30.0–30.9				1 .2	3 .6	1 .2		1 .2									6 1.2
1 / 29.0–29.9	1 .2																1 .2
COLUMN TOTAL	1 .2	1 .2	2 .4	16 3.3	34 7.0	48 9.8	80 16.4	73 15.0	92 18.9	70 14.3	38 7.8	19 3.9	7 1.4	4 .8	2 .4	1 .2	488 100.0

Table 63. Female Bivariate Table of Calf Circumference (VAR 12) and Ankle Circumference (VAR 13)

VAR2

VAR12	24.0–24.9 (1)	25.0–25.9 (2)	26.0–26.9 (3)	27.0–27.9 (4)	28.0–28.9 (5)	29.0–29.9 (6)	30.0–30.9 (7)	31.0–31.9 (8)	32.0–32.9 (9)	33.0–33.9 (10)	34.0–34.9 (11)	35.0–35.9 (12)	36.0–36.9 (13)	37.0–37.9 (14)	38.0–38.9 (15)	40.0–40.9 (17)	41.0–41.9 (18)	ROW TOTAL
16 44.0–44.9															1 / .2			1 / .2
13 41.0–41.9													1 / .2					1 / .2
12 40.0–40.9				1 / .2					2 / .4	1 / .2								4 / .8
11 39.0–39.9					1 / .2			2 / .4	1 / .2	1 / .2								5 / 1.0
10 38.0–38.9					3 / .6	1 / .2	5 / 1.0	6 / 1.2	2 / .4	2 / .4	6 / 1.2	2 / .4	1 / .2					28 / 5.7
9 37.0–37.9			1 / .2	3 / .6	1 / .2	4 / .8	13 / 2.7	7 / 1.4	14 / 2.9	6 / 1.2	4 / .8	5 / 1.0	3 / .6	2 / .4			1 / .2	64 / 13.1
8 36.0–36.9		1 / .2			6 / 1.2	10 / 2.0	5 / 1.0	16 / 3.3	7 / 1.4	12 / 2.5	11 / 2.2	6 / 1.2	1 / .2	1 / .2				76 / 15.5
7 35.0–35.9	1 / .2		1 / .2	2 / .4	7 / 1.4	12 / 2.5	15 / 3.1	12 / 2.5	7 / 1.4	14 / 2.9	6 / 1.2	4 / .8	1 / .2			1 / .2		83 / 17.0
6 34.0–34.9				4 / .8	5 / 1.0	12 / 2.5	10 / 2.0	18 / 3.7	17 / 3.5	7 / 1.4	7 / 1.4	9 / 1.8	2 / .4					91 / 18.6
5 33.0–33.9		1 / .2		2 / .4	7 / 1.4	7 / 1.4	8 / 1.6	8 / 1.6	14 / 2.9	8 / 1.6	3 / .6	3 / .6	1 / .2	1 / .2				63 / 12.9
4 32.0–32.9				3 / .6	3 / .6	6 / 1.2	8 / 1.6	4 / .8	13 / 2.7	3 / .6	6 / 1.2		2 / .4					48 / 9.8
3 31.0–31.9	1 / .2				5 / 1.0	3 / .6	3 / .6	2 / .4	3 / .6	1 / .2								18 / 3.7
2 30.0–30.9		1 / .2		1 / .2	1 / .2	1 / .2	1 / .2	1 / .2										6 / 1.2
1 29.0–29.9						1 / .2												1 / .2
COLUMN TOTAL	2 / .4	3 / .6	2 / .4	16 / 3.3	39 / 8.0	57 / 11.7	70 / 14.3	74 / 15.1	80 / 16.4	55 / 11.2	43 / 8.8	30 / 6.1	11 / 2.2	4 / .8	1 / .2	1 / .2	1 / .2	489 / 100.0

Table 64. Female Bivariate Table of Calf Circumference (VAR 12) and Calf Height (VAR 2)

VAR21

VAR12	42.5-44.9 (1)	45.0-47.4 (2)	47.5-49.9 (3)	50.0-52.4 (4)	52.5-54.9 (5)	55.0-57.4 (6)	57.5-59.9 (7)	60.0-62.4 (8)	62.5-64.9 (9)	65.0-67.4 (10)	67.5-69.9 (11)	70.0-72.4 (12)	72.5-74.9 (13)	75.0-77.4 (14)	77.5-79.9 (15)	80.0-82.4 (16)	87.5-89.9 (19)	ROW TOTAL
16 / 44.0-44.9																	1 / .2	1 / .2
13 / 41.0-41.9														1 / .2				1 / .2
12 / 40.0-40.9											2 / .4	1 / .2		1 / .2				4 / .8
11 / 39.0-39.9										1 / .2	1 / .2	2 / .4		1 / .2				5 / 1.0
10 / 38.0-38.9						1 / .2	2 / .4	1 / .2	8 / 1.6	5 / 1.0		4 / .8	2 / .4	3 / .6	2 / .4			28 / 5.7
9 / 37.0-37.9						4 / .8	4 / .8	14 / 2.9	11 / 2.2	9 / 1.8	12 / 2.5	6 / 1.2	3 / .6			1 / .2		64 / 13.1
8 / 36.0-36.9					1 / .2	8 / 1.6	12 / 2.5	13 / 2.7	15 / 3.1	15 / 3.1	3 / .6	3 / .6	2 / .4	4 / .8				76 / 15.5
7 / 35.0-35.9		1 / .2			7 / 1.4	12 / 2.5	18 / 3.7	17 / 3.5	12 / 2.5	5 / 1.0	8 / 1.6	2 / .4						82 / 16.8
6 / 34.0-34.9			3 / .6	4 / .8	7 / 1.4	18 / 3.7	25 / 5.1	16 / 3.3	10 / 2.0	7 / 1.4	1 / .2		1 / .2					92 / 18.8
5 / 33.0-33.9		2 / .4	2 / .4	5 / 1.0	12 / 2.5	13 / 2.7	19 / 3.9	7 / 1.4	1 / .2	2 / .4								63 / 12.9
4 / 32.0-32.9		2 / .4	4 / .8	16 / 3.3	10 / 2.0	4 / .8	5 / 1.0	6 / 1.2			1 / .2							48 / 9.8
3 / 31.0-31.9		2 / .4	8 / 1.6	4 / .8	3 / .6		1 / .2											18 / 3.7
2 / 30.0-30.9	1 / .2	2 / .4			2 / .4	1 / .2												6 / 1.2
1 / 29.0-29.9					1 / .2													1 / .2
COLUMN TOTAL	1 / .2	9 / 1.8	17 / 3.5	31 / 6.3	42 / 8.6	60 / 12.3	86 / 17.6	74 / 15.1	58 / 11.9	46 / 9.4	28 / 5.7	15 / 3.1	11 / 2.2	7 / 1.4	2 / .4	1 / .2	1 / .2	489 / 100.0

Table 65. Female Bivariate Table of Calf Circumference (VAR 12) and Weight (VAR 21)

VAR1

VAR2	141.0-142.9 (1)	143.0-144.9 (2)	147.0-148.9 (4)	149.0-150.9 (5)	151.0-152.9 (6)	153.0-154.9 (7)	155.0-156.9 (8)	157.0-158.9 (9)	159.0-160.9 (10)	161.0-162.9 (11)	163.0-164.9 (12)	165.0-166.9 (13)	167.0-168.9 (14)	169.0-170.9 (15)	171.0-172.9 (16)	173.0-174.9 (17)	175.0-176.9 (18)	177.0-178.9 (19)	ROW TOTAL
18 / 41.0-41.9																1 / .2			1 / .2
17 / 40.0-40.9																	1 / .2		1 / .2
15 / 38.0-38.9																1 / .2			1 / .2
14 / 37.0-37.9										1 / .2			1 / .2	1 / .2		1 / .2			4 / .8
13 / 36.0-36.9										1 / .2	1 / .2	1 / .2		3 / .6	1 / .2	2 / .4	2 / .4		11 / 2.2
12 / 35.0-35.9										1 / .2	2 / .4	6 / 1.2	7 / 1.4	6 / 1.2	5 / 1.0	1 / .2	1 / .2	1 / .2	30 / 6.1
11 / 34.0-34.9							1 / .2	2 / .4	2 / .4	3 / .6	6 / 1.2	6 / 1.2	10 / 2.0	5 / 1.0	3 / .6	2 / .4	2 / .4	2 / .4	44 / 9.0
10 / 33.0-33.9								3 / .6	6 / 1.2	7 / 1.4	12 / 2.4	9 / 1.8	6 / 1.2	3 / .6	6 / 1.2	1 / .2	2 / .4		55 / 11.2
9 / 32.0-32.9						4 / .8	7 / 1.4	12 / 2.4	13 / 2.7	12 / 2.4	7 / 1.4	11 / 2.2	5 / 1.0	2 / .4	3 / .6	3 / .6		1 / .2	80 / 16.3
8 / 31.0-31.9								12 / 2.4	6 / 1.2	11 / 2.2	12 / 2.4	11 / 2.2	12 / 2.4	6 / 1.2	1 / .2	1 / .2	2 / .4		74 / 15.1
7 / 30.0-30.9				2 / .4	8 / 1.6	5 / 1.0	7 / 1.4	13 / 2.7	11 / 2.2	10 / 2.0	8 / 1.6	5 / 1.0	1 / .2						70 / 14.3
6 / 29.0-29.9				2 / .4	4 / .8	13 / 2.7	10 / 2.0	7 / 1.4	6 / 1.2	5 / 1.0	3 / .6	4 / .8	1 / .2	2 / .4					57 / 11.6
5 / 28.0-28.9				3 / .6	6 / 1.2	5 / 1.0	4 / .8	9 / 1.8	9 / 1.8	2 / .4	1 / .2								39 / 8.0
4 / 27.0-27.9		1 / .2	1 / .2	5 / 1.0	5 / 1.0		3 / .6			1 / .2									16 / 3.3
3 / 26.0-26.9			1 / .2				1 / .2												2 / .4
2 / 25.0-25.9			2 / .4				1 / .2												3 / .6
1 / 24.0-24.9	2 / .4																		2 / .4
COLUMN TOTAL	2 / .4	1 / .2	4 / .8	12 / 2.4	23 / 4.7	27 / 5.5	45 / 9.2	53 / 10.8	58 / 11.8	55 / 11.2	51 / 10.4	54 / 11.0	37 / 7.6	23 / 4.7	19 / 3.9	13 / 2.7	9 / 1.8	4 / .8	490 / 100.0

Table 66. Female Bivariate Table of Calf Height (VAR 2) and Stature (VAR 1)

224

VAR13

VAR17	17.0-17.4 (1)	17.5-17.9 (2)	18.0-18.4 (3)	18.5-18.9 (4)	19.0-19.4 (5)	19.5-19.9 (6)	20.0-20.4 (7)	20.5-20.9 (8)	21.0-21.4 (9)	21.5-21.9 (10)	22.0-22.4 (11)	22.5-22.9 (12)	23.0-23.4 (13)	23.5-23.9 (14)	24.0-24.4 (15)	25.0-25.4 (17)	ROW TOTAL
14 7.8-7.9							1 .2										1 .2
13 7.6-7.7											1 .2						1 .2
12 7.4-7.5							1 .2	3 .6	2 .4	2 .4		1 .2					9 1.8
11 7.2-7.3						1 .2		2 .4	5 1.0	2 .4	3 .6					1 .2	14 2.9
10 7.0-7.1							2 .4	3 .6	5 1.0	1 .2	4 .8	1 .2	1 .2				17 3.5
9 6.8-6.9		1 .2			3 .6	5 1.0	5 1.0	4 .8	6 1.2	3 .6	4 .8	2 .4	1 .2		1 .2		35 7.2
8 6.6-6.7						1 .2	5 1.0	9 1.8	11 2.3	10 2.0	9 1.8	5 1.0	4 .8	2 .4			56 11.5
7 6.4-6.5			1 .2	3 .6	6 1.2	6 1.2	10 2.0	14 2.9	14 2.9	14 2.9	8 1.6	5 1.0	1 .2	2 .4	1 .2		85 17.4
6 6.2-6.3				3 .6	6 1.2	16 3.3	14 2.9	16 3.3	17 3.5	12 2.5	5 1.0	4 .8	1 .2	1 .2			95 19.5
5 6.0-6.1	1 .2			1 .2	6 1.2	5 1.0	11 2.3	22 4.5	12 2.5	19 3.9	16 3.3	6 1.2	2 .4	1 .2	1 .2		103 21.1
4 5.8-5.9					1 .2	7 1.4	2 .4	8 1.6	4 .8	10 2.0	8 1.6	2 .4					42 8.6
3 5.6-5.7					2 .4	5 1.0	3 .6	7 1.4	3 .6	3 .6	2 .4						25 5.1
2 5.4-5.5							2 .4	1 .2	1 .2								4 .8
1 5.2-5.3				1 .2													1 .2
COLUMN TOTAL	1 .2	1 .2	2 .4	16 3.3	34 7.0	48 9.8	81 16.6	73 15.0	92 18.9	69 14.1	38 7.8	19 3.9	7 1.4	4 .8	2 .4	1 .2	488 100.0

225

Table 67. Female Bivariate Table of Heel Breadth, Right (VAR 17) and Ankle Circumference (VAR 13)

VAR26

Each cell shows count (upper) and percentage (lower). Column index numbers: 1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16.

VAR17	7.6–7.7	8.0–8.1	8.2–8.3	8.4–8.5	8.6–8.7	8.8–8.9	9.0–9.1	9.2–9.3	9.4–9.5	9.6–9.7	9.8–9.9	10.0–10.1	10.2–10.3	10.4–10.5	10.6–10.7	ROW TOTAL
14 / 7.8–7.9									1 / .2							1 / .2
13 / 7.6–7.7									1 / .2							1 / .2
12 / 7.4–7.5								1 / .2	1 / .2	1 / .2	1 / .2	2 / .4	1 / .2	1 / .2	1 / .2	9 / 1.8
11 / 7.2–7.3					1 / .2		5 / 1.0	1 / .2		2 / .4		3 / .6	2 / .4			14 / 2.9
10 / 7.0–7.1							2 / .4	1 / .2	6 / 1.2	2 / .4	4 / .8	1 / .2	1 / .2			17 / 3.5
9 / 6.8–6.9				1 / .2	3 / .6	2 / .4	6 / 1.2	4 / .8	5 / 1.0	6 / 1.2	2 / .4	2 / .4	3 / .6	1 / .2		35 / 7.2
8 / 6.6–6.7				1 / .2	4 / .8	4 / .8	9 / 1.8	10 / 2.0	9 / 1.8	9 / 1.8	5 / 1.0	5 / 1.0				56 / 11.5
7 / 6.4–6.5				3 / .6	4 / .8	12 / 2.5	21 / 4.3	15 / 3.1	15 / 3.1	9 / 1.8	3 / .6	1 / .2	1 / .2			84 / 17.2
6 / 6.2–6.3			6 / 1.2	7 / 1.4	5 / 1.0	14 / 2.9	26 / 5.3	14 / 2.9	14 / 2.9	4 / .8	5 / 1.0					95 / 19.4
5 / 6.0–6.1		2 / .4	6 / 1.2	10 / 2.0	9 / 1.8	17 / 3.5	30 / 6.1	12 / 2.5	13 / 2.7	1 / .2	3 / .6					103 / 21.1
4 / 5.8–5.9			1 / .2	5 / 1.0	8 / 1.6	2 / .4	14 / 2.9	7 / 1.4	4 / .8	2 / .4	1 / .2					44 / 9.0
3 / 5.6–5.7		1 / .2	1 / .2	6 / 1.2	4 / .8	6 / 1.2	5 / 1.0	1 / .2	1 / .2							25 / 5.1
2 / 5.4–5.5				1 / .2	2 / .4	1 / .2										4 / .8
1 / 5.2–5.3	1 / .2															1 / .2
COLUMN TOTAL	1 / .2	3 / .6	14 / 2.9	34 / 7.0	40 / 8.2	58 / 11.9	118 / 24.1	67 / 13.7	69 / 14.1	36 / 7.4	27 / 5.5	13 / 2.7	6 / 1.2	2 / .4	1 / .2	489 / 100.0

Table 68. Female Bivariate Table of Heel Breadth, Right (VAR 17) and BOF Breadth, Horiz, Right (VAR 26)

226

VAR16

VAR17	18.5 - 18.9 (1)	20.0 - 20.4 (4)	20.5 - 20.9 (5)	21.0 - 21.4 (6)	21.5 - 21.9 (7)	22.0 - 22.4 (8)	22.5 - 22.9 (9)	23.0 - 23.4 (10)	23.5 - 23.9 (11)	24.0 - 24.4 (12)	24.5 - 24.9 (13)	25.0 - 25.4 (14)	25.5 - 25.9 (15)	26.0 - 26.4 (16)	26.5 - 26.9 (17)	ROW TOTAL
14 7.8-7.9							1 .2									1 .2
13 7.6-7.7									1 2							1 .2
12 7.4-7.5									1 .2	5 1.0	1 .2	1 .2		1 .2		9 1.8
11 7.2-7.3						1 .2	4 .8	2 .4	4 .8	1 .2	1 .2				1 .2	14 2.9
10 7.0-7.1						1 .2	3 .6	2 .4	2 .4	4 .8	3 .6	2 .4				17 3.5
9 6.8-6.9				1 .2	1 .2	4 .8	5 1.0	6 1.2	10 2.0	4 .8	2 .4		1 .2	1 .2		35 7.2
8 6.6-6.7					5 1.0	7 1.4	12 2.5	11 2.2	13 2.7	3 .6	4 .8	1 .2				56 11.5
7 6.4-6.5				1 .2	6 1.2	9 1.8	14 2.9	13 2.7	19 3.9	11 2.2	10 2.0	1 .2	1 .2			85 17.4
6 6.2-6.3				1 .2	12 2.5	13 2.7	25 5.1	19 3.9	13 2.7	9 1.8	2 .4					94 19.2
5 6.0-6.1		4 .8	4 .8	12 2.5	17 3.5	24 4.9	23 4.7	8 1.6	8 1.6	1 .2	1 .2	1 .2				103 21.1
4 5.8-5.9		1 .2	2 .4	3 .6	10 2.0	9 1.8	9 1.8	6 1.2	2 .4	2 .4						44 9.0
3 5.6-5.7		1 .2	3 .6	6 1.2	4 .8	10 2.0		1 .2								25 5.1
2 5.4-5.5				1 .2	2 .4	1 .2										4 .8
1 5.2-5.3	.2															1 .2
COLUMN TOTAL	1 .2	6 1.2	11 2.2	41 8.4	61 12.5	96 19.6	89 18.2	68 13.9	61 12.5	32 6.5	13 2.7	6 1.2	1 .2	2 .4	1 .2	489 100.0

Table 69.   Female Bivariate Table of Heel Breadth, Right (VAR 17) and BOF Circumference, Right (VAR 16)

VAR25

VAR17	19.0-19.4 (1)	20.0-20.4 (3)	20.5-20.9 (4)	21.0-21.4 (5)	21.5-21.9 (6)	22.0-22.4 (7)	22.5-22.9 (8)	23.0-23.4 (9)	23.5-23.9 (10)	24.0-24.4 (11)	24.5-24.9 (12)	25.0-25.4 (13)	25.5-25.9 (14)	26.0-26.4 (15)	26.5-26.9 (16)	27.0-27.4 (17)	27.5-27.9 (18)	28.5-28.9 (20)	ROW TOTAL
14 7.8-7.9												1 .2							1 .2
13 7.6-7.7																	1 .2		1 .2
12 7.4-7.5										1 .2		1 .2	1 .2	1 .2	3 .6		2 .4		9 1.8
11 7.2-7.3									1 .2	1 .2	2 .4	1 .2	3 .6	1 .2	3 .6	1 .2	1 .2		14 2.9
10 7.0-7.1									1 .2		1 .2	2 .4	3 .6	3 .6	5 1.0	1 .2	1 .2		17 3.5
9 6.8-6.9								3 .6	1 .2	6 1.2	5 1.0	4 .8	6 1.2	7 1.4	1 .2	1 .2		1 .2	35 7.1
8 6.6-6.7							1 .2	4 .8	4 .8	10 2.0	4 .8	13 2.7	11 2.2	5 1.0	3 .6	1 .2			56 11.4
7 6.4-6.5							4 .8	7 1.4	6 1.2	15 3.1	21 4.3	12 2.4	12 2.4	4 .8	2 .4	2 .4			85 17.3
6 6.2-6.3			1 .2		1 .2	2 .4	5 1.0	13 2.7	20 4.1	22 4.5	7 1.4	14 2.9	5 1.0	3 .6	1 .2	1 .2			95 19.4
5 6.0-6.1				1 .2	1 .2	5 1.0	6 1.2	11 2.2	12 2.4	20 4.1	14 2.9	14 2.9	12 2.4	4 .8	2 .4	1 .2			103 21.0
4 5.8-5.9						3 .6	4 .8	4 .8	5 1.0	9 1.8	4 .8	6 1.2	7 1.4	1 .2	1 .2				44 9.0
3 5.6-5.7						1 .2	4 .8	5 1.0	4 .8	3 .6	4 .8	3 .6	1 .2						25 5.1
2 5.4-5.5							1 .2	1 .2		2 .4									4 .8
1 5.2-5.3	1 .2																		1 .2
COLUMN TOTAL	1 .2	1 .2	1 .2	1 .2	10 2.0	17 3.5	31 6.3	48 9.8	67 13.7	77 15.7	63 12.9	68 13.9	46 9.4	27 5.5	19 3.9	8 1.6	4 .8	1 .2	490 100.0

Table 70.   Female Bivariate Table of Heel Breadth, Right (VAR 17) and Foot Length, Right (VAR 25)

228

VAR 15

VAR 17	18.5 - 18.9 (1)	20.0 - 20.4 (4)	20.5 - 20.9 (5)	21.0 - 21.4 (6)	21.5 - 21.9 (7)	22.0 - 22.4 (8)	22.5 - 22.9 (9)	23.0 - 23.4 (10)	23.5 - 23.9 (11)	24.0 - 24.4 (12)	24.5 - 24.9 (13)	25.0 - 25.4 (14)	25.5 - 25.9 (15)	26.5 - 26.9 (17)	27.0 - 27.4 (18)	ROW TOTAL
14 / 7.8-7.9										1 / .2						1 / .2
13 / 7.6-7.7												1 / .2				1 / .2
12 / 7.4-7.5											3 / .6	4 / .8	1 / .2	1 / .2		9 / 1.8
11 / 7.2-7.3								1 / .2	2 / .4	3 / .6	5 / 1.0	1 / .2	1 / .2		1 / .2	14 / 2.9
10 / 7.0-7.1							1 / .2	1 / .2	2 / .4	1 / .2	7 / 1.4	3 / .6	2 / .4			17 / 3.5
9 / 6.8-6.9							1 / .2	7 / 1.4	10 / 2.0	6 / 1.2	6 / 1.2	2 / .4	3 / .6			35 / 7.2
8 / 6.6-6.7							1 / .2	2 / .4	12 / 2.5	16 / 3.3	14 / 2.9	4 / .8	4 / .8	3 / .6		56 / 11.5
7 / 6.4-6.5					1 / .2	4 / .8	4 / .8	10 / 2.0	21 / 4.3	15 / 3.1	16 / 3.3	10 / 2.0	3 / .6			84 / 17.2
6 / 6.2-6.3					1 / .2	8 / 1.6	14 / 2.9	26 / 5.3	19 / 3.9	11 / 2.3	12 / 2.5	1 / .2	2 / .4			94 / 19.3
5 / 6.0-6.1		1 / .2		3 / .6	7 / 1.4	13 / 2.7	25 / 5.1	32 / 6.6	13 / 2.7	5 / 1.0	4 / .8					103 / 21.1
4 / 5.8-5.9				3 / .6	5 / 1.0	6 / 1.2	15 / 3.1	7 / 1.4	5 / 1.0	3 / .6						44 / 9.0
3 / 5.6-5.7				4 / .8	7 / 1.4	6 / 1.2	6 / 1.2	2 / .4								25 / 5.1
2 / 5.4-5.5			1 / .2		1 / .2	2 / .4										4 / .8
1 / 5.2-5.3	1 / .2															1 / .2
COLUMN TOTAL	1 / .2	1 / .2	1 / .2	12 / 2.5	32 / 6.6	46 / 9.4	86 / 17.6	102 / 20.9	75 / 15.4	60 / 12.3	40 / 8.2	20 / 4.1	10 / 2.0	1 / .2	1 / .2	488 / 100.0

Table 71.   Female Bivariate Table of Heel Breadth, Right (VAR 17) and Instep Circumference (VAR 15)

VAR26

Table 72. Female Bivariate Table of Heel-Ankle Circ (VAR 14) and BOF Breadth, Horiz, Right (VAR 26)

Cells show count (top) and percent (bottom), written here as "count / percent".

VAR14	7.6–7.7 (1)	8.0–8.1 (3)	8.2–8.3 (4)	8.4–8.5 (5)	8.6–8.7 (6)	8.8–8.9 (7)	9.0–9.1 (8)	9.2–9.3 (9)	9.4–9.5 (10)	9.6–9.7 (11)	9.8–9.9 (12)	10.0–10.1 (13)	10.2–10.3 (14)	10.4–10.5 (15)	10.6–10.7 (16)	ROW TOTAL
11 / 35.0–35.9											1 / .2				1 / .2	2 / .4
10 / 34.0–34.9							1 / .2	1 / .2	2 / .4	1 / .2	1 / .2	1 / .2	1 / .2			8 / 1.6
9 / 33.0–33.9					1 / .2	1 / .2	2 / .4	3 / .6	6 / 1.2	9 / 1.8	5 / 1.0	2 / .4		2 / .4		31 / 6.4
8 / 32.0–32.9				1 / .2	3 / .6	3 / .6	7 / 1.4	7 / 1.4	11 / 2.3	10 / 2.1	7 / 1.4	6 / 1.2	2 / .4			57 / 11.7
7 / 31.0–31.9				2 / .4	8 / 1.6	16 / 3.3	39 / 8.0	24 / 4.9	25 / 5.1	8 / 1.6	11 / 2.3	3 / .6	3 / .6			139 / 28.5
6 / 30.0–30.9			2 / .4	11 / 2.3	11 / 2.3	20 / 4.1	40 / 8.2	25 / 5.1	18 / 3.7	7 / 1.4		1 / .2				135 / 27.7
5 / 29.0–29.9		1 / .2	6 / 1.2	9 / 1.8	12 / 2.5	14 / 2.9	21 / 4.3	8 / 1.6	6 / 1.2	1 / .2	1 / .2					79 / 16.2
4 / 28.0–28.9		2 / .4	5 / 1.0	7 / 1.4	5 / 1.0	3 / .6	6 / 1.2		1 / .2							29 / 6.0
3 / 27.0–27.9			1 / .2	4 / .8			1 / .2	1 / .2								6 / 1.2
1 / 25.0–25.9	1 / .2															1 / .2
COLUMN TOTAL	1 / .2	3 / .6	14 / 2.9	34 / 7.0	40 / 8.2	57 / 11.7	117 / 24.0	68 / 14.0	69 / 14.2	36 / 7.4	26 / 5.3	13 / 2.7	6 / 1.2	2 / .4	1 / .2	487 / 100.0

230

```
                                                      VAR16
                  I
                  I18.5-  20.0-  20.5-  21.0-  21.5-  22.0-  22.5-  23.0-  23.5-  24.0-  24.5-  25.0-  25.5-  26.0-  26.5-   ROW
          VAR14   I18.9   20.4   20.9   21.4   21.9   22.4   22.9   23.4   23.9   24.4   24.9   25.4   25.9   26.4   26.9   TOTAL
                  I  1      4      5      6      7      8      9     10     11     12     13     14     15     16     17
```

VAR14	18.5-18.9 (1)	20.0-20.4 (4)	20.5-20.9 (5)	21.0-21.4 (6)	21.5-21.9 (7)	22.0-22.4 (8)	22.5-22.9 (9)	23.0-23.4 (10)	23.5-23.9 (11)	24.0-24.4 (12)	24.5-24.9 (13)	25.0-25.4 (14)	25.5-25.9 (15)	26.0-26.4 (16)	26.5-26.9 (17)	ROW TOTAL
11 35.0-35.9														1 .2	1 .2	2 .4
10 34.0-34.9									2 .4	2 .4	3 .6			1 .2		8 1.6
9 33.0-33.9							3 .6	6 1.2	8 1.6	6 1.2	6 1.2	1 .2	1 .2			31 6.4
8 32.0-32.9					3 .6	2 .4	5 1.0	13 2.7	16 3.3	14 2.9	1 .2	3 .6				57 11.7
7 31.0-31.9			1 .2	1 .2	10 2.1	27 5.5	38 7.8	24 4.9	27 5.5	7 1.4	1 .2	2 .4				138 28.3
6 30.0-30.9			2 .4	16 3.3	15 3.1	37 7.6	34 7.0	22 4.5	6 1.2	3 .6	1 .2					136 27.9
5 29.0-29.9			5 1.0	11 2.3	23 4.7	27 5.5	9 1.8	3 .6	1 .2							79 16.2
4 28.0-28.9		5 1.0	1 .2	12 2.5	8 1.6	3 .6										29 6.0
3 27.0-27.9		1 .2	2 .4	1 .2	2 .4											6 1.2
1 25.0-25.9	1 .2															1 .2
COLUMN TOTAL	1 .2	6 1.2	11 2.3	41 8.4	61 12.5	96 19.7	89 18.3	68 14.0	60 12.3	32 6.6	12 2.5	6 1.2	1 .2	2 .4	1 .2	487 100.0

231

Table 73.   Female Bivariate Table of Heel-Ankle Circ (VAR 14)
and BOF Circ, Right (VAR 16)

VAR24

VAR14	12.0-12.4 (1)	14.0-14.4 (5)	14.5-14.9 (6)	15.0-15.4 (7)	15.5-15.9 (8)	16.0-16.4 (9)	16.5-16.9 (10)	17.0-17.4 (11)	17.5-17.9 (12)	18.0-18.4 (13)	18.5-18.9 (14)	19.0-19.4 (15)	19.5-19.9 (16)	20.0-20.4 (17)	20.5-20.9 (18)	ROW TOTAL
11 35.0-35.9												1 .2	1 .2			2 .4
10 34.0-34.9												3 .6	2 .4	2 .4	1 .2	8 1.6
9 33.0-33.9										6 1.2	6 1.2	9 1.8	7 1.4	3 .6		31 6.4
8 32.0-32.9						1 .2		2 .4	7 1.4	9 1.8	12 2.5	19 3.9	5 1.0	2 .4		57 11.7
7 31.0-31.9						3 .6	3 .6	26 5.3	30 6.2	38 7.8	25 5.1	10 2.1	2 .4	1 .2		138 28.3
6 30.0-30.9					2 .4	14 2.9	11 2.3	44 9.0	28 5.7	24 4.9	9 1.8	3 .6	1 .2			136 27.9
5 29.0-29.9	1 .2			1 .2	4 .8	13 2.7	15 3.1	22 4.5	14 2.9	8 1.6	1 .2					79 16.2
4 28.0-28.9				3 .6	3 .6	7 1.4	11 2.3	2 .4	3 .6							29 6.0
3 27.0-27.9			1 .2		3 .6	1 .2	1 .2									6 1.2
1 25.0-25.9		1 .2														1 .2
COLUMN TOTAL	1 .2	1 .2	1 .2	4 .8	12 2.5	39 8.0	41 8.4	96 19.7	82 16.8	85 17.5	53 10.9	45 9.2	18 3.7	8 1.6	1 .2	487 100.0

Table 74. Female Bivariate Table of Heel-Ankle Circ (VAR 14) and BOF Length, Right (VAR 24)

232

VAR14 \ VAR25	19.0-19.4 (1)	20.0-20.4 (3)	20.5-20.9 (4)	21.0-21.4 (5)	21.5-21.9 (6)	22.0-22.4 (7)	22.5-22.9 (8)	23.0-23.4 (9)	23.5-23.9 (10)	24.0-24.4 (11)	24.5-24.9 (12)	25.0-25.4 (13)	25.5-25.9 (14)	26.0-26.4 (15)	26.5-26.9 (16)	27.0-27.4 (17)	27.5-27.9 (18)	28.5-28.9 (20)	ROW TOTAL
11 35.0-35.9														1 .2			1 .2		2 .4
10 34.0-34.9													1 .2	1 .2	2 .4	2 .4	1 .2	1 .2	8 1.6
9 33.0-33.9										1 .2		4 .8	6 1.2	6 1.2	10 2.0	2 .4	2 .4		31 6.4
8 32.0-32.9										7 1.4	5 1.0	9 1.8	12 2.5	13 2.7	7 1.4	4 .8			57 11.7
7 31.0-31.9						1 .2	2 .4	3 .6	12 2.5	26 5.3	26 5.3	41 8.4	23 4.7	5 1.0					139 28.5
6 30.0-30.9						2 .4	11 2.3	21 4.3	31 6.4	33 6.8	21 4.3	13 2.7	3 .6	1 .2					136 27.9
5 29.0-29.9						2 .4	9 1.8	11 2.3	18 3.7	20 4.1	9 1.8	10 2.0							79 16.2
4 28.0-28.9				1 .2	7 1.4	3 .6	7 1.4	6 1.2	4 .8	1 .2									29 5.9
3 27.0-27.9		1 .2		1 .2	1 .2	2 .4		1 .2											6 1.2
1 25.0-25.9	1 .2																		1 .2
COLUMN TOTAL	1 .2	1 .2	1 .2	1 .2	10 2.0	17 3.5	31 6.4	49 10.0	67 13.7	77 15.8	62 12.7	67 13.7	45 9.2	27 5.5	19 3.9	8 1.6	4 .8	1 .2	488 100.0

Table 75. Female Bivariate Table of Heel-Ankle Circumference (VAR 14) and Foot Length, Right (VAR 25)

VAR17

VAR14	5.2-5.3 (1)	5.4-5.5 (2)	5.6-5.7 (3)	5.8-5.9 (4)	6.0-6.1 (5)	6.2-6.3 (6)	6.4-6.5 (7)	6.6-6.7 (8)	6.8-6.9 (9)	7.0-7.1 (10)	7.2-7.3 (11)	7.4-7.5 (12)	7.6-7.7 (13)	7.8-7.9 (14)	ROW TOTAL
11 35.0-35.9											1 .2	1 .2			2 .4
10 34.0-34.9							1 .2	1 .2	2 .4	2 .4		1 .2	1 .2		8 1.6
9 33.0-33.9						2 .4	4 .8	5 1.0	5 1.0	6 1.2	5 1.0	4 .8			31 6.4
8 32.0-32.9				1 .2	4 .8	2 .4	11 2.3	17 3.5	11 2.3	4 .8	4 .8	3 .6			57 11.7
7 31.0-31.9				6 1.2	20 4.1	32 6.6	41 8.4	22 4.5	10 2.1	5 1.0	2 .4			1 .2	139 28.5
6 30.0-30.9			6 1.2	14 2.9	45 9.2	35 7.2	21 4.3	9 1.8	5 1.0		1 .2				136 27.9
5 29.0-29.9		3 .6	11 2.3	14 2.9	22 4.5	19 3.9	6 1.2	1 .2	2 .4						78 16.0
4 28.0-28.9		1 .2	7 1.4	6 1.2	10 2.1	4 .8	1 .2								29 6.0
3 27.0-27.9			1 .2	3 .6	1 .2	1 .2									6 1.2
1 25.0-25.9	1 .2														1 .2
COLUMN TOTAL	1 .2	4 .8	25 5.1	44 9.0	102 20.9	95 19.5	85 17.5	55 11.3	35 7.2	17 3.5	13 2.7	9 1.8	1 .2	1 .2	487 100.0

Table 76. Female Bivariate Table of Heel-Ankle Circ (Var 14)
and Heel Breadth, Right (VAR 17)

234

VAR15

VAR14	18.5-18.9 (1)	20.0-20.4 (4)	20.5-20.9 (5)	21.0-21.4 (6)	21.5-21.9 (7)	22.0-22.4 (8)	22.5-22.9 (9)	23.0-23.4 (10)	23.5-23.9 (11)	24.0-24.4 (12)	24.5-24.9 (13)	25.0-25.4 (14)	25.5-25.9 (15)	26.5-26.9 (17)	27.0-27.4 (18)	ROW TOTAL
11 35.0-35.9														1 / .2	1 / .2	2 / .4
10 34.0-34.9											2 / .4	2 / .4	3 / .6			7 / 1.4
9 33.0-33.9									1 / .2	2 / .4	5 / 1.0	11 / 2.3	6 / 1.2	6 / 1.2		31 / 6.4
8 32.0-32.9							1 / .2	1 / .4	7 / 1.4	10 / 2.1	17 / 3.5	15 / 3.1	6 / 1.2	1 / .2		57 / 11.7
7 31.0-31.9						4 / .8	14 / 2.9	31 / 6.0	36 / 7.4	30 / 6.2	11 / 2.3	4 / .8				138 / 28.4
6 30.0-30.9					6 / 1.2	19 / 3.9	34 / 7.0	43 / 8.8	25 / 5.1	8 / 1.6	1 / .2					136 / 28.0
5 29.0-29.9					17 / 3.5	17 / 3.5	31 / 6.4	12 / 2.5	2 / .4							79 / 16.3
4 28.0-28.9				1 / .2	11 / 2.3	6 / 1.2	5 / 1.0	6 / 1.2								29 / 6.0
3 27.0-27.9		1 / .2			1 / .2	3 / .6	1 / .2									6 / 1.2
1 25.0-25.9	1 / .2															1 / .2
COLUMN TOTAL	1 / .2	1 / .2	1 / .2	12 / 2.5	32 / 6.6	46 / 9.5	86 / 17.7	102 / 21.0	75 / 15.4	60 / 12.3	40 / 8.2	18 / 3.7	10 / 2.1	1 / .2	1 / .2	486 / 100.0

Table 77. Female Bivariate Table of Heel-Ankle Circumference (VAR 14) and Instep Circumference (VAR 15)

235

Table showing VAR21 (Weight) across columns and VAR14 (Heel-Ankle Circumference) down rows. Each cell shows count (upper) and percentage (lower).

VAR14	42.5-44.9 (1)	45.0-47.4 (2)	47.5-49.9 (3)	50.0-52.4 (4)	52.5-54.9 (5)	55.0-57.4 (6)	57.5-59.9 (7)	60.0-62.4 (8)	62.5-64.9 (9)	65.0-67.4 (10)	67.5-69.9 (11)	70.0-72.4 (12)	72.5-74.9 (13)	75.0-77.4 (14)	77.5-79.9 (15)	80.0-82.4 (16)	87.5-89.9 (19)	ROW TOTAL
11 (35.0-35.9)														1 / .2	·		1 / .2	2 / .4
10 (34.0-34.9)						1 / .2			2 / .4	1 / .2	2 / .4	1 / .2			1 / .2			8 / 1.6
9 (33.0-33.9)						1 / .2		3 / .6	5 / 1.0	6 / 1.2	5 / 1.0	5 / 1.0	2 / .4	4 / .8				31 / 6.4
8 (32.0-32.9)				1 / .2	2 / .4	2 / .4	8 / 1.6	12 / 2.5	10 / 2.1	5 / 1.0	7 / 1.4	4 / .8	5 / 1.0	1 / .2				57 / 11.7
7 (31.0-31.9)			2 / .4	5 / 1.0	7 / 1.4	10 / 2.1	22 / 4.5	28 / 5.7	24 / 4.9	23 / 4.7	9 / 1.8	4 / .8	2 / .4	1 / .2	1 / .2	1 / .2		139 / 28.5
6 (30.0-30.9)			3 / .6	6 / 1.2	14 / 2.9	30 / 6.2	34 / 7.0	21 / 4.3	14 / 2.9	8 / 1.6	4 / .8		1 / .2					135 / 27.7
5 (29.0-29.9)		1 / .2	7 / 1.4	14 / 2.9	14 / 2.9	13 / 2.7	18 / 3.7	6 / 1.2	4 / .8		2 / .4							79 / 16.2
4 (28.0-28.9)	1 / .2	4 / .8	4 / .8	5 / 1.0	5 / 1.0	3 / .6	4 / .8	3 / .6										29 / 6.0
3 (27.0-27.9)		3 / .6	1 / .2		1 / .2			1 / .2										6 / 1.2
1 (25.0-25.9)		1 / .2																1 / .2
COLUMN TOTAL	1 / .2	9 / 1.8	17 / 3.5	31 / 6.4	43 / 8.8	60 / 12.3	86 / 17.7	74 / 15.2	57 / 11.7	44 / 9.0	28 / 5.7	15 / 3.1	11 / 2.3	7 / 1.4	2 / .4	1 / .2	1 / .2	487 / 100.0

Table 78. Female Bivariate Table of Heel-Ankle Circumference (VAR 14) and Weight (VAR 21)

VAR13

VAR15	17.0-17.4 (1)	17.5-17.9 (2)	18.0-18.4 (3)	18.5-18.9 (4)	19.0-19.4 (5)	19.5-19.9 (6)	20.0-20.4 (7)	20.5-20.9 (8)	21.0-21.4 (9)	21.5-21.9 (10)	22.0-22.4 (11)	22.5-22.9 (12)	23.0-23.4 (13)	23.5-23.9 (14)	24.0-24.4 (15)	25.0-25.4 (17)	ROW TOTAL
18 / 27.0-27.4																1 / .2	1 / .2
17 / 26.5-26.9										1 / .2							1 / .2
15 / 25.5-25.9									2 / .4	1 / .2	3 / .6	2 / .4	2 / .4				10 / 2.1
14 / 25.0-25.4								5 / 1.0	3 / .6	5 / 1.0	5 / 1.0	2 / .4					20 / 4.1
13 / 24.5-24.9							3 / .6	3 / .6	13 / 2.7	9 / 1.8	6 / 1.2	2 / .4	1 / .2	1 / .2	2 / .4		40 / 8.2
12 / 24.0-24.4		1 / .2					2 / .4	4 / .8	10 / 2.1	12 / 2.5	11 / 2.3	8 / 1.6	8 / 1.6	3 / .6	1 / .2		60 / 12.3
11 / 23.5-23.9						2 / .4	6 / 1.2	10 / 2.1	15 / 3.1	16 / 3.3	17 / 3.5	6 / 1.2	1 / .2		1 / .2		74 / 15.2
10 / 23.0-23.4			1 / .2	5 / 1.0	8 / 1.6	9 / 1.8	23 / 4.7	16 / 3.3	19 / 3.9	9 / 1.8	7 / 1.4	4 / .8	1 / .2				102 / 20.9
9 / 22.5-22.9				3 / .6	8 / 1.6	11 / 2.1	18 / 3.7	16 / 3.3	15 / 3.1	13 / 2.7	2 / .4						86 / 17.7
8 / 22.0-22.4				1 / .2	5 / 1.0	10 / 2.1	11 / 2.3	5 / 1.0	9 / 1.8	4 / .8	1 / .2						46 / 9.4
7 / 21.5-21.9				1 / .2	6 / 1.2	9 / 1.8	10 / 2.1	3 / .6	3 / .6								32 / 6.6
6 / 21.0-21.4			1 / .2	5 / 1.0	5 / 1.0		1 / .2										12 / 2.5
5 / 20.5-20.9							1 / .2										1 / .2
4 / 20.0-20.4	1 / .2																1 / .2
1 / 18.5-18.9				1 / .2													1 / .2
COLUMN TOTAL	1 / .2	1 / .2	2 / .4	16 / 3.3	34 / 7.0	47 / 9.7	81 / 16.6	73 / 15.0	92 / 18.9	70 / 14.4	38 / 7.8	19 / 3.9	7 / 1.4	3 / .6	2 / .4	1 / .2	487 / 100.0

Table 79. Female Bivariate Table of Instep Circumference (VAR 15) and Ankle Circumference (VAR 13)

VAR15

VAR26	18.5-18.9 (1)	20.0-20.4 (4)	20.5-20.9 (5)	21.0-21.4 (6)	21.5-21.9 (7)	22.0-22.4 (8)	22.5-22.9 (9)	23.0-23.4 (10)	23.5-23.9 (11)	24.0-24.4 (12)	24.5-24.9 (13)	25.0-25.4 (14)	25.5-25.9 (15)	26.5-26.9 (17)	27.0-27.4 (18)	ROW TOTAL
16 / 10.6-10.7														1 / .2		1 / .2
15 / 10.4-10.5												2 / .4				2 / .4
14 / 10.2-10.3									1 / .2	1 / .2	2 / .4	1 / .2	1 / .2			6 / 1.2
13 / 10.0-10.1										3 / .6	7 / 1.4	2 / .4	1 / .2			13 / 2.7
12 / 9.8-9.9								3 / .6	6 / 1.2	4 / .8	6 / 1.2	2 / .4	5 / 1.0		1 / .2	27 / 5.5
11 / 9.6-9.7							1 / .2	4 / .8	5 / 1.0	9 / 1.8	10 / 2.0	5 / 1.0	2 / .4			36 / 7.4
10 / 9.4-9.5					1 / .2	3 / .6	5 / 1.0	16 / 3.3	20 / 4.1	10 / 2.0	7 / 1.4	4 / .8	1 / .2		·	67 / 13.7
9 / 9.2-9.3						3 / .6	14 / 2.9	16 / 3.3	12 / 2.5	17 / 3.5	3 / .6	3 / .6				68 / 13.9
8 / 9.0-9.1				2 / .4	6 / 1.2	10 / 2.0	33 / 6.8	31 / 6.4	24 / 4.9	8 / 1.6	3 / .6	1 / .2				118 / 24.2
7 / 8.8-8.9					4 / .8	10 / 2.0	16 / 3.3	17 / 3.5	7 / 1.4	3 / .6	1 / .2					58 / 11.9
6 / 8.6-8.7				2 / .4	3 / .6	10 / 2.0	9 / 1.8	11 / 2.3		4 / .8	1 / .2					40 / 8.2
5 / 8.4-8.5		1 / .2	1 / .2	5 / 1.0	11 / 2.3	6 / 1.2	5 / 1.0	5 / 1.0								34 / 7.0
4 / 8.2-8.3				2 / .4	6 / 1.2	3 / .6	2 / .4			1 / .2						14 / 2.9
3 / 8.0-8.1				1 / .2	1 / .2	1 / .2										3 / .6
1 / 7.6-7.7	1 / .2															1 / .2
COLUMN TOTAL	1 / .2	1 / .2	1 / .2	12 / 2.5	32 / 6.6	46 / 9.4	85 / 17.4	103 / 21.1	75 / 15.4	60 / 12.3	40 / 8.2	20 / 4.1	10 / 2.0	1 / .2	1 / .2	488 / 100.0

Table 80.   Female Bivariate Table of BOF Breadth, Horiz, Right (VAR 26) and Instep Circumference (VAR 15)

VAR25

VAR15	21.5-21.9 (1)	23.5-23.9 (5)	24.0-24.4 (6)	24.5-24.9 (7)	25.0-25.4 (8)	25.5-25.9 (9)	26.0-26.4 (10)	26.5-26.9 (11)	27.0-27.4 (12)	27.5-27.9 (13)	29.0-29.4 (14)	29.5-29.9 (15)	29.0-29.4 (16)	29.5-29.3 (17)	30.0-30.4 (18)	ROW TOTAL
16 / 29.5-29.9												1 / .3				1 / .3
15 / 29.0-29.4									1 / .3		1 / .3		3 / 1.0			5 / 1.7
14 / 28.5-28.9									1 / .3		2 / .7	2 / .7	3 / 1.0	2 / .7	1 / .3	11 / 3.8
13 / 28.0-28.4									1 / .3	2 / .7	2 / .7	4 / 1.4	1 / .3	2 / .7	1 / .3	13 / 4.5
12 / 27.5-27.9								2 / .7	2 / .7	4 / 1.4	8 / 2.8	2 / .7	3 / 1.0	2 / .7	1 / .3	24 / 8.3
11 / 27.0-27.4							2 / .7	1 / .3	3 / 1.0	3 / 1.0	6 / 2.1	3 / 1.0	2 / .7	1 / .3	1 / .3	22 / 7.6
10 / 26.5-26.9					1 / .3	2 / .7	5 / 1.7	6 / 2.1	9 / 3.1	6 / 2.1	8 / 2.8	1 / .3				38 / 13.1
9 / 26.0-26.4				2 / .7	2 / .7	3 / 1.0	6 / 2.1	13 / 4.5	6 / 2.1	7 / 2.4	4 / 1.4		1 / .3			44 / 15.2
8 / 25.5-25.9	1 / .3			1 / .3	1 / .3	3 / 1.0	5 / 1.7	9 / 3.1	12 / 4.1	1 / .3	5 / 1.7	1 / .3	2 / .7			41 / 14.1
7 / 25.0-25.4				4 / 1.4	6 / 2.1	6 / 2.1	7 / 2.4	9 / 3.1	10 / 3.4	2 / .7	1 / .3					45 / 15.5
6 / 24.5-24.9			1 / .3	1 / .3		3 / 1.0	3 / 1.0	4 / 1.4	2 / .7	2 / .7						16 / 5.5
5 / 24.0-24.4				3 / 1.0	6 / 2.1	7 / 2.4	1 / .3	1 / .3	1 / .3							19 / 6.6
4 / 23.5-23.9			1 / .3	2 / .7	2 / .7	1 / .3	1 / .3									7 / 2.4
3 / 23.0-23.4				1 / .3		1 / .3	1 / .3									3 / 1.0
1 / 22.0-22.4							1 / .3									1 / .3
COLUMN TOTAL	1 / .3	2 / .7	5 / 1.7	12 / 4.1	20 / 6.9	25 / 8.6	32 / 11.0	43 / 14.8	48 / 16.6	25 / 8.6	37 / 12.8	14 / 4.8	15 / 5.2	7 / 2.4	4 / 1.4	290 / 100.0

Table 81.   Female Bivariate Table of Instep Circumference (VAR 15) and Foot Length, Right (VAR 25)

VAR21

VAR15	42.5-44.9 (1)	45.0-47.4 (2)	47.5-49.9 (3)	50.0-52.4 (4)	52.5-54.9 (5)	55.0-57.4 (6)	57.5-59.9 (7)	60.0-62.4 (8)	62.5-64.9 (9)	65.0-67.4 (10)	67.5-69.9 (11)	70.0-72.4 (12)	72.5-74.9 (13)	75.0-77.4 (14)	77.5-79.9 (15)	80.0-82.4 (16)	87.5-89.9 (19)	ROW TOTAL
18 / 27.0-27.4																1 / .2		1 / .2
17 / 26.5-26.9														1 / .2				1 / .2
15 / 25.5-25.9									1 / .2	2 / .4	2 / .4	2 / .4	2 / .4	1 / .2				10 / 2.0
14 / 25.0-25.4								2 / .4	3 / .6	4 / .8	4 / .8	3 / .6	1 / .2	3 / .6				20 / 4.1
13 / 24.5-24.9				1 / .2	1 / .2		2 / .4	5 / 1.0	6 / 1.2	9 / 1.8	3 / .6	4 / .8	6 / 1.2	2 / .4	1 / .2			40 / 8.2
12 / 24.0-24.4			1 / .2	1 / .2	1 / .2	4 / .8	4 / .8	13 / 2.7	16 / 3.3	9 / 1.8	7 / 1.4	3 / .6	1 / .2					60 / 12.3
11 / 23.5-23.9					6 / 1.2	10 / 2.0	16 / 3.3	18 / 3.7	9 / 1.8	9 / 1.8	5 / 1.0	2 / .4						75 / 15.4
10 / 23.0-23.4			2 / .4	7 / 1.4	10 / 2.0	18 / 3.7	22 / 4.5	13 / 2.7	13 / 2.7	11 / 2.3	3 / .6	1 / .2	1 / .2		1 / .2	1 / .2		103 / 21.1
9 / 22.5-22.9			4 / .8	6 / 1.2	11 / 2.3	14 / 2.9	24 / 4.9	16 / 3.3	5 / 1.0	2 / .4	3 / .6							85 / 17.4
8 / 22.0-22.4		2 / .4	3 / .6	5 / 1.0	7 / 1.4	6 / 1.2	15 / 3.1	3 / .6	5 / 1.0									45 / 9.4
7 / 21.5-21.9		3 / .6	4 / .8	8 / 1.6	5 / 1.0	6 / 1.2	3 / .6	2 / .4			1 / .2							32 / 6.6
6 / 21.0-21.4	1 / .2	3 / .6	3 / .6	2 / .4	1 / .2	1 / .2		1 / .2										12 / 2.5
5 / 20.5-20.9				1 / .2														1 / .2
4 / 20.0-20.4					1 / .2													1 / .2
1 / 18.5-18.9		1 / .2																1 / .2
COLUMN TOTAL	1 / .2	9 / 1.8	17 / 3.5	31 / 6.4	43 / 8.8	59 / 12.1	86 / 17.6	73 / 15.0	58 / 11.9	45 / 9.4	28 / 5.7	15 / 3.1	11 / 2.3	7 / 1.4	2 / .4	1 / .2	1 / .2	488 / 100.0

Table 82. Female Bivariate Table of Instep Circumference (VAR 15) and Weight (VAR 21)

240

VAR1

VAR25	156.4 – 158.3 (1)	158.4 – 160.3 (2)	160.4 – 162.3 (3)	162.4 – 164.3 (4)	164.4 – 166.3 (5)	166.4 – 168.3 (6)	168.4 – 170.3 (7)	170.4 – 172.3 (8)	172.4 – 174.3 (9)	174.4 – 176.3 (10)	176.4 – 178.3 (11)	178.4 – 180.3 (12)	180.4 – 182.3 (13)	182.4 – 184.3 (14)	184.4 – 186.3 (15)	186.4 – 188.3 (16)	188.4 – 190.3 (17)	190.4 – 192.3 (18)	192.4 – 194.3 (19)	ROW TOTAL
18 / 30.0-30.4																1 / .3	1 / .3	1 / .3	1 / .3	4 / 1.4
17 / 29.5-29.9										1 / .3	1 / .3	1 / .3	1 / .3		1 / .3		1 / .3	1 / .3		7 / 2.4
16 / 29.0-29.4								1 / .3	1 / .3	2 / .7			4 / 1.4	2 / .7	2 / .7		2 / .7		1 / .3	15 / 5.1
15 / 28.5-28.9							1 / .3				2 / .7	3 / 1.0		3 / 1.0	2 / .7	1 / .3		1 / .3	1 / .3	14 / 4.8
14 / 28.0-28.4								1 / .3	5 / 1.7	3 / 1.0	3 / 1.0	8 / 2.7	8 / 2.7	3 / 1.0	3 / 1.0	1 / .3	1 / .3	1 / .3		37 / 12.7
13 / 27.5-27.9							1 / .3		4 / 1.4	3 / 1.0	5 / 1.7	1 / .3	3 / 1.0	6 / 2.1		1 / .3	1 / .3			25 / 8.6
12 / 27.0-27.4				2 / .7	5 / 1.7		1 / .3	2 / .7	5 / 1.7	6 / 2.1	4 / 1.4	11 / 3.8	4 / 1.4	2 / .7	5 / 1.7				1 / .3	48 / 16.4
11 / 26.5-26.9				1 / .3			7 / 2.4	9 / 3.1	6 / 2.1	4 / 1.4	5 / 1.7	4 / 1.4	4 / 1.4	2 / .7				1 / .3		43 / 14.7
10 / 26.0-26.4				1 / .3	1 / .3	3 / 1.0	5 / 1.7	3 / 1.0	7 / 2.4	6 / 2.1	3 / 1.0	3 / 1.0								32 / 11.0
9 / 25.5-25.9				2 / .7	3 / 1.0	4 / 1.4	1 / .3	4 / 1.4	7 / 2.4	3 / 1.0	1 / .3		1 / .3							26 / 8.9
8 / 25.0-25.4				3 / 1.0	4 / 1.4	5 / 1.7	3 / 1.0	3 / 1.0	1 / .3	1 / .3			1 / .3							21 / 7.2
7 / 24.5-24.9	1 / .3	1 / .3	2 / .7	1 / .3	1 / .3	1 / .3	1 / .3	3 / 1.0	1 / .3											12 / 4.1
6 / 24.0-24.4			1 / .3		2 / .7	1 / .3	1 / .3													5 / 1.7
5 / 23.5-23.9		1 / .3		1 / .3																2 / .7
1 / 21.5-21.9											1 / .3									1 / .3
COLUMN TOTAL	1 / .3	2 / .7	3 / 1.0	9 / 3.1	13 / 4.5	19 / 6.5	21 / 7.2	26 / 8.9	37 / 12.7	29 / 9.9	25 / 8.6	31 / 10.6	26 / 8.9	18 / 6.2	13 / 4.5	4 / 1.4	6 / 2.1	5 / 1.7	4 / 1.4	292 / 100.0

Table 83.   Female Bivariate Table of Foot Length, Right (VAR 25) and Stature (VAR 1)

241

VAR1

VAR21 \ VAR1	141.0-142.9	143.0-144.9	147.0-148.9	149.0-150.9	151.0-152.9	153.0-154.9	155.0-156.9	157.0-158.9	159.0-160.9	161.0-162.9	163.0-164.9	165.0-166.9	167.0-168.9	169.0-170.9	171.0-172.9	173.0-174.9	175.0-176.9	177.0-178.9	ROW TOTAL
	1	2	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
19 / 87.5-89.9																1 (.2)			1 (.2)
16 / 80.0-82.4													1 (.2)						1 (.2)
15 / 77.5-79.9																1 (.2)	1 (.2)		2 (.4)
14 / 75.0-77.4											1 (.2)		1 (.2)		1 (.2)	1 (.2)	2 (.4)	1 (.2)	7 (1.4)
13 / 72.5-74.9										1 (.2)		3 (.6)	1 (.2)	1 (.2)		3 (.6)	2 (.4)		11 (2.2)
12 / 70.0-72.4							1 (.2)		1 (.2)		1 (.2)	2 (.4)	1 (.2)	1 (.2)	3 (.6)	4 (.8)		1 (.2)	15 (3.1)
11 / 67.5-69.9					1 (.2)			1 (.2)	4 (.8)	1 (.2)	2 (.4)	2 (.4)	9 (1.8)	3 (.6)	2 (.4)		3 (.6)		28 (5.7)
10 / 65.0-67.4						3 (.6)		1 (.2)	2 (.4)	4 (.8)	7 (1.4)	10 (2.0)	7 (1.4)	8 (1.6)	3 (.6)	1 (.2)			46 (9.4)
9 / 62.5-64.9				1 (.2)	1 (.2)	2 (.4)	3 (.6)	4 (.8)	11 (2.2)	6 (1.2)	13 (2.7)	6 (1.2)	3 (.6)	3 (.6)	3 (.6)	1 (.2)	1 (.2)		58 (11.8)
8 / 60.0-62.4					2 (.4)	5 (1.0)	6 (1.2)	8 (1.6)	10 (2.0)	10 (2.0)	8 (1.6)	9 (1.8)	7 (1.4)	4 (.8)	3 (.6)	1 (.2)		1 (.2)	74 (15.1)
7 / 57.5-59.9			1 (.2)		4 (.8)	4 (.8)	9 (1.8)	18 (3.7)	12 (2.4)	10 (2.0)	8 (1.6)	11 (2.2)	3 (.6)	1 (.2)	4 (.8)			1 (.2)	86 (17.6)
6 / 55.0-57.4				4 (.8)	3 (.6)	4 (.8)	11 (2.2)	7 (1.4)	7 (1.4)	12 (2.4)	3 (.6)	5 (1.0)	4 (.8)						60 (12.2)
5 / 52.5-54.9			1 (.2)	4 (.8)	4 (.8)	4 (.8)	7 (1.4)	3 (.6)	5 (1.0)	3 (.6)	5 (1.0)	4 (.8)	1 (.2)	2 (.4)					43 (8.8)
4 / 50.0-52.4				2 (.4)	4 (.8)	2 (.4)	4 (.8)	6 (1.2)	5 (1.0)	5 (1.0)	3 (.6)								31 (6.3)
3 / 47.5-49.9		1 (.2)	1 (.2)	1 (.2)		3 (.6)	1 (.2)	5 (1.0)	1 (.2)	3 (.6)			1 (.2)						17 (3.5)
2 / 45.0-47.4	2 (.4)			1 (.2)	4 (.8)	2 (.4)													9 (1.8)
1 / 42.5-44.9			1 (.2)																1 (.2)
COLUMN TOTAL	2 (.4)	1 (.2)	4 (.8)	13 (2.7)	23 (4.7)	26 (5.3)	45 (9.2)	53 (10.8)	58 (11.8)	55 (11.2)	51 (10.4)	54 (11.0)	37 (7.6)	23 (4.7)	19 (3.9)	13 (2.7)	9 (1.8)	4 (.8)	490 (100.0)

Table 84.   Female Bivariate Table of Weight (VAR 21) and Stature (VAR 1)

Correlation Coefficients

To reiterate, the bivariate frequency tables provide useful information about the distribution of individuals within size categories of two variables. However, also of extreme importance in the sizing and design of clothing and equipment is an understanding of the nature and degree of association between two variables. The shape of the distribution in a bivariate frequency table provides some insight in this regard, but a more precise measure of association is desirable.

A common and useful statistic that fullfills this need is the Pearson product-moment coefficient of correlation. Commonly called the correlation coefficient, and mathematically designated "r", the value of this statistic for any two variables will vary between -1.0 and +1.0. The absolute magnitude of the value indicates the strength of association. Thus, a perfect correlation coefficient of 1.0 occurs when a variable is correlated with itself, while two variables that are lowly correlated yield a coefficient that approaches 0.0. The positive or negative sign of the coefficient reflects whether an increase or decrease of one variable is matched by an increase or decrease in the second variable. For example, the correlation of +0.903 for Foot Length and BOF Length in males shows that these two variables are highly correlated and that as one increases in size the other does as well. This is corroborated by the shape of the bivariate distribution for these variables (see Table 22), which depicts an elliptical band of numbers that originates in the lower left corner of the table and steeply slopes upward toward the right corner.

The correlation coefficients for both males or females in this report are mostly positive. A very few are negative, but these are also very small in magnitude. Other anthropometric surveys dealing with much larger arrays of measurements have shown that most body dimensions are usually positively correlated with one another.

The correlation coefficients for all possible pairs of the 33 variables are presented in Tables 85 and 86 for males and females, respectively. By design of the Pearson Corr procedure of SPSS (Nie et al., 1985), each correlation matrix is symmetrical. This means that the coefficients above the diagonal row formed by the perfect correlations (1.000) are mirrored by identical coefficients below the diagonal. All values are printed to four decimal places. Asterisks beside the coefficients denote probability levels regarding whether a value significantly differs from a zero correlation. Finally, due to space considerations, variable numbers have been utilized as column and row headings. Therefore, to facilitate reading the tables, the following Index with variable names corresponding to the variable numbers is provided.

Variable Index for Correlation Matrices

VAR1   Stature

VAR2   Calf Height

VAR3   Ankle Height

VAR4   Medial Malleolus Height

VAR5   Lateral Malleolus Height

VAR6   Dorsal Arch Height

VAR7   Plantar Arch Height

VAR8   BOF Height

VAR9   1st Toe Height

VAR10 Maximum Toe Height

VAR11 Outside BOF Height

VAR12 Calf Circumference

VAR13 Ankle Circumference

VAR14 Heel-Ankle Circumference

VAR15 Instep Circumference

VAR16 BOF Circumference, Right

VAR17 Heel Breadth, Right

VAR18 BOF Breadth, Diagonal

VAR19 Heel Breadth, Left

VAR20 BOF Circumference Left

VAR21 Weight

VAR22 Ankle Length

VAR23 Instep Length

VAR24 BOF Length, Right

VAR25 Foot Length, Right

VAR26 BOF Breadth, Horizontal, Right

VAR27 Outside BOF Length

VAR28 5th Toe Length

VAR29 BOF Length, Left

VAR30 Foot Length, Left

VAR31 BOF Breadth, Horizontal, Left

VAR32 Bimalleolar Breadth

VAR33 1st-3rd Toe Breadth

244

Table 85. Correlation Coefficients for Foot Dimensions -- Male

	VAR1	VAR2	VAR3	VAR4	VAR5	VAR6	VAR7	VAR8	VAR9	VAR10
VAR1	1.0000	0.6889 *	0.5131 *	0.5216 *	0.4600 *	0.5895 *	0.3215 *	0.4662 *	0.1743 *	0.3064 *
VAR2	0.6889 *	1.0000	0.3982 *	0.2233 *	0.2016	0.3381 *	0.1159	0.2690 *	0.1450 *	0.3773 *
VAR3	0.5131 *	0.3982 *	1.0000	0.3011 *	0.2646 *	0.3492 *	0.1445	0.2388 *	0.2185 *	0.1897
VAR4	0.5216 *	0.2233 *	0.3011 *	1.0000	0.7095 *	0.7328 *	0.6495 *	0.5177 *	0.1508 *	0.1221
VAR5	0.4600 *	0.2016	0.2646 *	0.7095 *	1.0000	0.6201 *	0.5894 *	0.4501 *	0.0961	0.0915
VAR6	0.5895 *	0.3381 *	0.3492 *	0.7328 *	0.6201 *	1.0000	0.6747 *	0.5841 *	0.1908	0.1857
VAR7	0.3215 *	0.1159	0.1445	0.6495 *	0.5894 *	0.6747 *	1.0000	0.4706 *	0.0152	0.0685
VAR8	0.4662 *	0.2690 *	0.2388 *	0.5177 *	0.4501 *	0.5841 *	0.4706 *	1.0000	0.2557 *	0.3688 *
VAR9	0.1743	0.1450	0.2185 *	0.1508	0.0961	0.1908	0.0152	0.2557 *	1.0000	0.2058
VAR10	0.3064 *	0.3773 *	0.1897	0.1221	0.0915	0.1857	0.0685	0.3688 *	0.2058	1.0000
VAR11	0.3488 *	0.3385 *	0.2761 *	0.1530	0.0418	0.1871	0.0493	0.3344 *	0.3228 *	0.4934 *
VAR12	0.2977 *	0.1862	-0.0129	0.2570 *	0.1470	0.2521 *	0.0988	0.4521 *	0.2203 *	0.3911 *
VAR13	0.4866 *	0.2314 *	0.0561	0.4005 *	0.3240 *	0.4170 *	0.2476 *	0.5850 *	0.2455 *	0.4350 *
VAR14	0.6975 *	0.5733 *	0.4248 *	0.3758 *	0.2838 *	0.5064 *	0.2206 *	0.5702 *	0.3538 *	0.5302 *
VAR15	0.6118 *	0.5119 *	0.3656 *	0.3043 *	0.2038	0.4272 *	0.1280	0.5630 *	0.3621 *	0.5710 *
VAR16	0.5747 *	0.4004 *	0.3531 *	0.2962 *	0.2238 *	0.3976 *	0.1246	0.5870 *	0.3602 *	0.4588 *
VAR17	0.3674 *	0.4481 *	0.1873	0.0607	-0.1092	0.1936	-0.0320	0.2882 *	0.2486 *	0.5112 *
VAR18	0.4996 *	0.3722 *	0.3144 *	0.1866	0.0989	0.2974 *	0.0290	0.4106 *	0.3093 *	0.4395 *
VAR19	0.4065 *	0.4864 *	0.2207 *	0.0868	-0.0435	0.2320 *	0.0047	0.3192 *	0.2727 *	0.5207 *
VAR20	0.5606 *	0.3803 *	0.3667 *	0.3011 *	0.2167 *	0.3995 *	0.1487	0.5924 *	0.3498 *	0.4653 *
VAR21	0.5663 *	0.4504 *	0.2499 *	0.3528 *	0.2252 *	0.3776 *	0.1896	0.4565 *	0.2521 *	0.4922 *
VAR22	0.4994 *	0.4955 *	0.3632 *	0.0989	0.0653	0.0992	-0.0732	0.3396 *	0.2444 *	0.4828 *
VAR23	0.4577 *	0.5075 *	0.3171 *	0.0284	-0.0151	0.1167	-0.1561	0.2324 *	0.2073	0.4248 *
VAR24	0.6595 *	0.6151 *	0.4778 *	0.1954	0.0933	0.2546 *	-0.0788	0.2479 *	0.2603 *	0.4218 *
VAR25	0.6889 *	0.6324 *	0.4799 *	0.2569 *	0.1504	0.3751 *	0.0050	0.4206 *	0.2703 *	0.4075 *
VAR26	0.4611 *	0.3449 *	0.2754 *	0.1753	0.1034	0.2843 *	0.0388	0.4112 *	0.2704 *	0.4101 *
VAR27	0.6575 *	0.6245 *	0.4675 *	0.2843 *	0.1952	0.3299 *	0.0945	0.3039 *	0.1892	0.4143 *
VAR28	0.6972 *	0.6469 *	0.4755 *	0.3095 *	0.2126	0.3727 *	0.0846	0.3638 *	0.2177	0.4412 *
VAR29	0.6569 *	0.6248 *	0.5162 *	0.1876	0.1072	0.2857 *	-0.0412	0.3502 *	0.2564 *	0.4363 *
VAR30	0.7233 *	0.6681 *	0.5031 *	0.2856 *	0.1799	0.4015 *	0.0282	0.4406 *	0.2736 *	0.4225 *
VAR31	0.4786 *	0.3017 *	0.3161 *	0.2281 *	0.1596	0.3038 *	0.0880	0.4679 *	0.2678 *	0.4073 *
VAR32	0.5207 *	0.3154 *	0.3619 *	0.2043	0.0939	0.3230 *	-0.0040	0.4346 *	0.3148 *	0.3425 *
VAR33	0.3185 *	0.0408	0.0962	0.2830 *	0.1975	0.2959 *	0.1156	0.3614 *	0.2031	0.0931

*
Significant to 0.05 level using Bonferroni
multiple comparisons criteria.

245

Table 85. Correlation Coefficients for Foot Dimensions -- Male (cont.)

	VAR11	VAR12	VAR13	VAR14	VAR15	VAR16	VAR17	VAR18	VAR19	VAR20
VAR1	0.3488 *	0.2977 *	0.4866 *	0.6975 *	0.6118 *	0.5747 *	0.3674 *	0.4996 *	0.4065 *	0.5606 *
VAR2	0.3385 *	0.1862	0.2314 *	0.5733 *	0.5119 *	0.4004 *	0.4481 *	0.3722 *	0.4864 *	0.3803 *
VAR3	0.2761 *	-0.0129	0.0561	0.4248 *	0.3656 *	0.3531 *	0.1873	0.3144 *	0.2207 *	0.3667 *
VAR4	0.1530	0.2570 *	0.4005 *	0.3758 *	0.3043 *	0.2962 *	0.0607	0.1866	0.0868	0.3011 *
VAR5	0.0418	0.1470	0.3240 *	0.2838 *	0.2038	0.2238 *	-0.1092	0.0989	-0.0435	0.2167 *
VAR6	0.1871	0.2521 *	0.4170 *	0.5064 *	0.4272 *	0.3976 *	0.1936	0.2974 *	0.2320 *	0.3995 *
VAR7	0.0493	0.0988	0.2476 *	0.2206 *	0.1280	0.1246	-0.0320	0.0290	0.0047	0.1487
VAR8	0.3344 *	0.4521 *	0.5850 *	0.5702 *	0.5630 *	0.5870 *	0.2882 *	0.4106 *	0.3192 *	0.5924 *
VAR9	0.3228 *	0.2203 *	0.2455 *	0.3538 *	0.3621 *	0.3602 *	0.2486 *	0.3093 *	0.2727 *	0.3498 *
VAR10	0.4934 *	0.3911 *	0.4350 *	0.5302 *	0.5710 *	0.4588 *	0.5112 *	0.4395 *	0.5207 *	0.4653 *
VAR11	1.0000	0.4495 *	0.4500 *	0.5355 *	0.5947 *	0.5243 *	0.4855 *	0.4561 *	0.5377 *	0.5685 *
VAR12	0.4495 *	1.0000	0.7785 *	0.5533 *	0.6729 *	0.6098 *	0.4689 *	0.5490 *	0.4898 *	0.6067 *
VAR13	0.4500 *	0.7785 *	1.0000	0.7286 *	0.7260 *	0.6791 *	0.4724 *	0.5799 *	0.4936 *	0.6879 *
VAR14	0.5355 *	0.5533 *	0.7286 *	1.0000	0.8494 *	0.7903 *	0.6537 *	0.6948 *	0.6602 *	0.7636 *
VAR15	0.5947 *	0.6729 *	0.7260 *	0.8494 *	1.0000	0.8565 *	0.6524 *	0.7939 *	0.6774 *	0.8610 *
VAR16	0.5243 *	0.6098 *	0.6791 *	0.7903 *	0.8565 *	1.0000	0.5222 *	0.9410 *	0.5502 *	0.9387 *
VAR17	0.4855 *	0.4689 *	0.4724 *	0.6537 *	0.6524 *	0.5222 *	1.0000	0.5397 *	0.9164 *	0.5397 *
VAR18	0.4561 *	0.5490 *	0.5799 *	0.6948 *	0.7939 *	0.9410 *	0.5397 *	1.0000	0.5414 *	0.8814 *
VAR19	0.5377 *	0.4898 *	0.4936 *	0.6602 *	0.6774 *	0.5502 *	0.9164 *	0.5414 *	1.0000	0.5616 *
VAR20	0.5685 *	0.6067 *	0.6879 *	0.7636 *	0.8610 *	0.9387 *	0.5397 *	0.8814 *	0.5616 *	1.0000
VAR21	0.6061 *	0.7846 *	0.6989 *	0.7132 *	0.7591 *	0.6533 *	0.5831 *	0.5765 *	0.6229 *	0.6668 *
VAR22	0.4599 *	0.4582 *	0.5796 *	0.7326 *	0.6837 *	0.6343 *	0.5603 *	0.6292 *	0.5684 *	0.6085 *
VAR23	0.3843 *	0.3247 *	0.4443 *	0.6278 *	0.5431 *	0.5277 *	0.5924 *	0.5400 *	0.5707 *	0.4978 *
VAR24	0.4357 *	0.3993 *	0.4975 *	0.7279 *	0.6949 *	0.6478 *	0.5463 *	0.6690 *	0.5647 *	0.6160 *
VAR25	0.4105 *	0.4061 *	0.5181 *	0.7569 *	0.7163 *	0.6780 *	0.5297 *	0.6606 *	0.5483 *	0.6545 *
VAR26	0.3917 *	0.5014 *	0.5151 *	0.6333 *	0.7237 *	0.8245 *	0.4761 *	0.8412 *	0.4875 *	0.7801 *
VAR27	0.3464 *	0.3131 *	0.4329 *	0.6659 *	0.6125 *	0.4948 *	0.4816 *	0.4827 *	0.4817 *	0.5044 *
VAR28	0.3718 *	0.3638 *	0.4867 *	0.7335 *	0.6884 *	0.5978 *	0.5252 *	0.5963 *	0.5275 *	0.5965 *
VAR29	0.4238 *	0.3907 *	0.4855 *	0.7502 *	0.7094 *	0.6481 *	0.5488 *	0.6420 *	0.5590 *	0.6456 *
VAR30	0.4082 *	0.4098 *	0.5288 *	0.7860 *	0.7235 *	0.6914 *	0.5673 *	0.6687 *	0.5784 *	0.6781 *
VAR31	0.3989 *	0.5128 *	0.5779 *	0.6243 *	0.7285 *	0.8299 *	0.4698 *	0.8152 *	0.4812 *	0.8480 *
VAR32	0.4438 *	0.5286 *	0.6270 *	0.6695 *	0.6908 *	0.6633 *	0.4835 *	0.6220 *	0.5026 *	0.6594 *
VAR33	0.2674 *	0.3112 *	0.4510 *	0.3818 *	0.4213 *	0.4967 *	0.2369 *	0.4206 *	0.2523 *	0.4598 *

*Significant to 0.05 level using Bonferroni
multiple comparisons criteria.

Table 85. Correlation Coefficients for Foot Dimensions -- Male (cont.)

	VAR21	VAR22	VAR23	VAR24	VAR25	VAR26	VAR27	VAR28	VAR29	VAR30
VAR1	0.5663 *	0.4994 *	0.4577 *	0.6595 *	0.6889 *	0.4611 *	0.6575 *	0.6972 *	0.6569 *	0.7233 *
VAR2	0.4504 *	0.4955 *	0.5075 *	0.6151 *	0.6324 *	0.3449 *	0.6245 *	0.6469 *	0.6248 *	0.6681 *
VAR3	0.2499 *	0.3632 *	0.3171 *	0.4778 *	0.4799 *	0.2754 *	0.4675 *	0.4755 *	0.5162 *	0.5031 *
VAR4	0.3528 *	0.0989	0.0284	0.1954	0.2569 *	0.1753	0.2843 *	0.3095 *	0.1876	0.2856 *
VAR5	0.2252 *	0.0653	-0.0151	0.0933	0.1504	0.1034	0.1952	0.2126	0.1072	0.1799 *
VAR6	0.3776 *	0.0992	0.1167	0.2546 *	0.3751 *	0.2843 *	0.3299 *	0.3727 *	0.2857 *	0.4015 *
VAR7	0.1896	-0.0732	-0.1561 *	-0.0788	0.0050	0.0388	0.0945	0.0846	-0.0412	0.0282
VAR8	0.4565 *	0.3396 *	0.2324 *	0.2479 *	0.4206 *	0.4112 *	0.3039 *	0.3638 *	0.3502 *	0.4406 *
VAR9	0.2521 *	0.2444 *	0.2073	0.2603 *	0.2703 *	0.2704 *	0.1892	0.2177 *	0.2564 *	0.2736 *
VAR10	0.4922 *	0.4828 *	0.4248 *	0.4218 *	0.4075 *	0.4101 *	0.4143 *	0.4412 *	0.4363 *	0.4225 *
VAR11	0.6061 *	0.4599 *	0.3843 *	0.4357 *	0.4105 *	0.3917 *	0.3464 *	0.3718 *	0.4238 *	0.4082 *
VAR12	0.7846 *	0.4582 *	0.3247 *	0.3993 *	0.4061 *	0.5014 *	0.3131 *	0.3638 *	0.3907 *	0.4098 *
VAR13	0.6989 *	0.5796 *	0.4443 *	0.4975 *	0.5181 *	0.5151 *	0.4329 *	0.4867 *	0.4855 *	0.5288 *
VAR14	0.7132 *	0.7326 *	0.6278 *	0.7279 *	0.7569 *	0.6333 *	0.6659 *	0.7335 *	0.7502 *	0.7860 *
VAR15	0.7591 *	0.6837 *	0.5431 *	0.6949 *	0.7163 *	0.7237 *	0.6125 *	0.6884 *	0.7094 *	0.7235 *
VAR16	0.6533 *	0.6343 *	0.5277 *	0.6478 *	0.6780 *	0.8245 *	0.4948 *	0.5978 *	0.6481 *	0.6914 *
VAR17	0.5831 *	0.5603 *	0.5924 *	0.5463 *	0.5297 *	0.4761 *	0.4816 *	0.5252 *	0.5488 *	0.5673 *
VAR18	0.5765 *	0.6292 *	0.5400 *	0.6690 *	0.6606 *	0.8412 *	0.4827 *	0.5963 *	0.6420 *	0.6687 *
VAR19	0.6229 *	0.5684 *	0.5707 *	0.5647 *	0.5483 *	0.4875 *	0.4817 *	0.5275 *	0.5590 *	0.5784 *
VAR20	0.6668 *	0.6085 *	0.4978 *	0.6160 *	0.6545 *	0.7801 *	0.5044 *	0.5965 *	0.6456 *	0.6781 *
VAR21	1.0000	0.5626 *	0.4406 *	0.5579 *	0.5520 *	0.5293 *	0.5020 *	0.5465 *	0.5628 *	0.5694 *
VAR22	0.5626 *	1.0000	0.7673 *	0.7844 *	0.7456 *	0.5346 *	0.6612 *	0.6989 *	0.7623 *	0.7240 *
VAR23	0.4406 *	0.7673 *	1.0000	0.7746 *	0.7260 *	0.4348 *	0.6285 *	0.6599 *	0.7508 *	0.7297 *
VAR24	0.5579 *	0.7844 *	0.7746 *	1.0000	0.9029 *	0.5300 *	0.7941 *	0.8405 *	0.9012 *	0.8876 *
VAR25	0.5520 *	0.7456 *	0.7260 *	0.9029 *	1.0000	0.5720 *	0.8115 *	0.8641 *	0.8885 *	0.9474 *
VAR26	0.5293 *	0.5346 *	0.4348 *	0.5300 *	0.5720 *	1.0000	0.5057 *	0.5873 *	0.5549 *	0.6034 *
VAR27	0.5020 *	0.6612 *	0.6285 *	0.7941 *	0.8115 *	0.5057 *	1.0000	0.9218 *	0.7944 *	0.8248 *
VAR28	0.5465 *	0.6989 *	0.6599 *	0.8405 *	0.8641 *	0.5873 *	0.9218 *	1.0000	0.8324 *	0.8817 *
VAR29	0.5628 *	0.7623 *	0.7508 *	0.9012 *	0.8885 *	0.5549 *	0.7944 *	0.8324 *	1.0000	0.9279 *
VAR30	0.5694 *	0.7240 *	0.7297 *	0.8876 *	0.9474 *	0.6034 *	0.8248 *	0.8817 *	0.9279 *	1.0000
VAR31	0.5461 *	0.5581 *	0.4780 *	0.5438 *	0.5683 *	0.8307 *	0.4906 *	0.5697 *	0.5153 *	0.5880 *
VAR32	0.5350 *	0.5671 *	0.5149 *	0.6313 *	0.6351 *	0.5608 *	0.5408 *	0.5870 *	0.6070 *	0.6434 *
VAR33	0.3617 *	0.2788 *	0.1932	0.2285 *	0.2694 *	0.4115 *	0.1775	0.2127	0.2403 *	0.2846 *

*Significant to 0.05 level using Bonferroni
multiple comparisons criteria.

247

Table 85. Correlation Coefficients for Foot Dimensions -- Male (cont.)

	VAR31	VAR32	VAR33
VAR1	0.4786 *	0.5207 *	0.3185
VAR2	0.3017 *	0.3154 *	0.0408
VAR3	0.3161 *	0.3619 *	0.0962
VAR4	0.2281 *	0.2043 *	0.2830
VAR5	0.1596	0.0939	0.1975
VAR6	0.3038 *	0.3230 *	0.2959
VAR7	0.0880	-0.0040	0.1156
VAR8	0.4679 *	0.4346 *	0.3614
VAR9	0.2678 *	0.3148 *	0.2031
VAR10	0.4073 *	0.3425 *	0.0931
VAR11	0.3989 *	0.4438 *	0.2674
VAR12	0.5128 *	0.5286 *	0.3112
VAR13	0.5779 *	0.6270 *	0.4510
VAR14	0.6243 *	0.6695 *	0.3818
VAR15	0.7285 *	0.6908 *	0.4213
VAR16	0.8299 *	0.6633 *	0.4967
VAR17	0.4698 *	0.4835 *	0.2369
VAR18	0.8152 *	0.6220 *	0.4206
VAR19	0.4812 *	0.5026 *	0.2523
VAR20	0.8480 *	0.6594 *	0.4598
VAR21	0.5461 *	0.5350 *	0.3617
VAR22	0.5581 *	0.5671 *	0.2788
VAR23	0.4780 *	0.5149 *	0.1932
VAR24	0.5438 *	0.6313 *	0.2285
VAR25	0.5683 *	0.6351 *	0.2694
VAR26	0.8307 *	0.5608 *	0.4115
VAR27	0.4906 *	0.5408 *	0.1775
VAR28	0.5697 *	0.5870 *	0.2127
VAR29	0.5153 *	0.6070 *	0.2403
VAR30	0.5880 *	0.6434 *	0.2846
VAR31	1.0000	0.5789 *	0.4811
VAR32	0.5789 *	1.0000	0.3800
VAR33	0.4811 *	0.3800 *	1.0000

*Significant at 0.05 level using Bonferroni
multiple comparisons criteria.

Table 86. Correlation Coefficients for Foot Dimensions -- Female

	VAR1	VAR2	VAR3	VAR4	VAR5	VAR6	VAR7	VAR8	VAR9	VAR10
VAR1	1.0000	0.7051 *	0.6223 **	0.4320 *	0.4275 *	0.5300 *	0.2092 *	0.3671 *	0.1763 *	0.2568 *
VAR2	0.7051 *	1.0000	0.5679 **	0.1404 *	0.1984 *	0.3470 *	0.0218	0.2261 *	0.2445 *	0.3437 *
VAR3	0.6223 *	0.5679 *	1.0000	0.3603 *	0.3461 *	0.4469 *	0.1299	0.2236 *	0.1981 *	0.2792 *
VAR4	0.4320 *	0.1404	0.3603 **	1.0000	0.6271 *	0.6498 *	0.5497 *	0.5106 *	-0.0064	0.0080
VAR5	0.4275 *	0.1984 *	0.3461 **	0.6271 *	1.0000	0.6589 *	0.5655 *	0.4282 *	-0.0330	0.0236
VAR6	0.5300 *	0.3470 *	0.4469 **	0.6498 *	0.6589 *	1.0000	0.6132 *	0.5848 *	0.0945	0.1269 *
VAR7	0.2092 *	0.0218	0.1299	0.5497 *	0.5655 *	0.6132 *	1.0000	0.4801 *	-0.0936	-0.0039
VAR8	0.3671 *	0.2261 *	0.2236 **	0.5106 *	0.4282 *	0.5848 *	0.4801 *	1.0000	0.1938 *	0.2729 *
VAR9	0.1763 *	0.2445 *	0.1981 **	-0.0064	-0.0330	0.0945	-0.0936	0.1938 *	1.0000	0.4061 *
VAR10	0.2568 *	0.3437 *	0.2792 **	0.0080	0.0236	0.1269	-0.0039	0.2729 *	0.4061 *	1.0000
VAR11	0.1656	0.2690 *	0.1462	0.0236	-0.0011	0.1746 *	-0.0272	0.3221 *	0.3547 *	0.4497 *
VAR12	0.2276 *	0.1847 *	0.0338	0.2034 *	0.1790 *	0.2491 *	0.1300	0.3621 *	0.1187	0.2258 *
VAR13	0.3767 *	0.1366	0.0273	0.3877 *	0.2634 *	0.3949 *	0.2879 *	0.4831 *	0.1593	0.2169 *
VAR14	0.6810 *	0.6279 *	0.5273 **	0.3100 *	0.2433 *	0.5065 *	0.1378	0.4442 *	0.4094 *	0.4598 *
VAR15	0.5468 *	0.5143 *	0.4246 **	0.2616 *	0.2007 *	0.4081 *	0.0656	0.4476 *	0.4301 *	0.5211 *
VAR16	0.5226 *	0.3881 *	0.4244 **	0.2968 *	0.2266 *	0.4012 *	0.0797	0.4378 *	0.3808 *	0.3972 *
VAR17	0.3255 *	0.4899 *	0.2860 **	-0.0243	-0.0440	0.1523	-0.1303	0.2171 *	0.4297 *	0.4870 *
VAR18	0.4810 *	0.3773 *	0.4177 **	0.1868 *	0.1249	0.3014 *	-0.0366	0.2621 *	0.3474 *	0.3775 *
VAR19	0.3406 *	0.4740 *	0.2981 **	-0.0182	-0.0278	0.1792 *	-0.1105	0.2507 *	0.4481 *	0.4775 *
VAR20	0.5115 *	0.3817 *	0.4038 **	0.2728 *	0.2049 *	0.3812 *	0.0660	0.4363 *	0.3785 *	0.4227 *
VAR21	0.6019 *	0.5087 *	0.3376 **	0.3041 *	0.2680 *	0.3709 *	0.1547	0.3979 *	0.2229 *	0.3244 *
VAR22	0.4853 *	0.4865 *	0.3580 **	0.0545	-0.0322	0.0743	-0.1168 *	0.1801 *	0.3757 *	0.4033 *
VAR23	0.5382 *	0.5632 *	0.4089 **	0.0609	0.0045	0.1805 *	-0.1095 *	0.1434	0.3539 *	0.3612 *
VAR24	0.6444 *	0.6172 *	0.5157 **	0.1114	0.0429	0.2172 *	-0.1433	0.0834	0.3492 *	0.3997 *
VAR25	0.7311 *	0.6774 *	0.5619 **	0.2119 *	0.1354	0.3359 *	-0.0648	0.2535 *	0.3590 *	0.3911 *
VAR26	0.4223 *	0.3288 *	0.3576 **	0.2112 *	0.1637	0.2958 *	-0.0106	0.2951 *	0.3312 *	0.3398 *
VAR27	0.6676 *	0.6438 *	0.5243 **	0.2089 *	0.1523	0.3098 *	0.0005	0.1801 *	0.2582 *	0.3678 *
VAR28	0.6985 *	0.6512 *	0.5424 **	0.2514 *	0.1805 *	0.3571 *	0.0101	0.2493 *	0.3013 *	0.3908 *
VAR29	0.6313 *	0.5970 *	0.5170 **	0.1852 *	0.1083	0.2644 *	-0.0943	0.1659	0.3040 *	0.3716 *
VAR30	0.7525 *	0.6937 *	0.5839 **	0.2423 *	0.1596	0.3647 *	-0.0398	0.2602 *	0.3384 *	0.3883 *
VAR31	0.4387 *	0.3572 *	0.3420 **	0.1735 *	0.1442	0.2824 *	-0.0289	0.2874 *	0.3315 *	0.3426 *
VAR32	0.4916 *	0.3461 *	0.3645 **	0.2241 *	0.0947	0.2685 *	0.0839	0.3543 *	0.3077 *	0.3476 *
VAR33	0.2195 *	0.0917	0.1724 **	0.1900 *	0.1604	0.2308 *	0.0453	0.2330 *	0.2075 *	0.1246

* Significant to 0.05 level using Bonferroni multiple comparisons criteria.

Table 86. Correlation Coefficients for Foot Dimensions -- Female (cont.)

	VAR11	VAR12	VAR13	VAR14	VAR15	VAR16	VAR17	VAR18	VAR19	VAR20
VAR1	0.1656	0.2276 *	0.3767 **	0.6810 **	0.5468 **	0.5226 **	0.3255 **	0.4810 *	0.3406 *	0.5115 *
VAR2	0.2690 *	0.1847 *	0.1366	0.6279 **	0.5143 **	0.3881 **	0.4899 **	0.3773 *	0.4740 *	0.3817 *
VAR3	0.1462	0.0338	0.0273	0.5273 **	0.4246 **	0.4244 **	0.2860 **	0.4177 *	0.2981 *	0.4038 *
VAR4	0.0236	0.2034 *	0.3877 **	0.3100 **	0.2616 **	0.2968 **	-0.0243	0.1868 *	-0.0182	0.2728 *
VAR5	-0.0011	0.1790 *	0.2634 **	0.2433 **	0.2007 **	0.2266 **	-0.0440	0.1249	-0.0278	0.2049 *
VAR6	0.1746 *	0.2491 *	0.3949 **	0.5065 **	0.4081 **	0.4012 **	0.1523	0.3014 *	0.1792 *	0.3812 *
VAR7	-0.0272	0.1300	0.2879 **	0.1378	0.0656	0.0797	-0.1303	-0.0366	-0.1105	0.0660
VAR8	0.3221 *	0.3621 *	0.4831 **	0.4442 **	0.4476 **	0.4378 **	0.2171 *	0.2621 *	0.2507 *	0.4363 *
VAR9	0.3547 *	0.1187	0.1593	0.4094 **	0.4301 **	0.3808 **	0.4297 *	0.3474 *	0.4481 *	0.3785 *
VAR10	0.4497 *	0.2258 **	0.2169 **	0.4598 **	0.5211 **	0.3972 **	0.4870 *	0.3775 *	0.4775 *	0.4227 *
VAR11	1.0000	0.3117 **	0.3025 **	0.4457 **	0.5105 **	0.4302 **	0.4541 *	0.3414 *	0.4670 *	0.4538 *
VAR12	0.3117 *	1.0000	0.6867 **	0.4458 **	0.5317 **	0.4525 **	0.2980 *	0.3799 *	0.3101 *	0.4528 *
VAR13	0.3025 *	0.6867 **	1.0000	0.5920 **	0.5756 **	0.5496 **	0.2409 *	0.4514 *	0.2630 *	0.5388 *
VAR14	0.4457 *	0.4458 **	0.5920 **	1.0000	0.8290 **	0.7529 **	0.6784 *	0.7112 *	0.6779 *	0.7418 *
VAR15	0.5105 *	0.5317 **	0.5756 **	0.8290 **	1.0000	0.8247 **	0.6524 *	0.7728 *	0.6483 *	0.8223 *
VAR16	0.4302 *	0.4525 **	0.5496 **	0.7529 **	0.8247 **	1.0000	0.5358 *	0.9413 *	0.5411 *	0.9385 *
VAR17	0.4541 *	0.2980 **	0.2409 **	0.6784 **	0.6524 **	0.5358 **	1.0000	0.5527 *	0.9271 *	0.5468 *
VAR18	0.3414 *	0.3799 **	0.4514 **	0.7112 **	0.7728 **	0.9413 **	0.5527 *	1.0000	0.5482 *	0.8922 *
VAR19	0.4670 *	0.3101 **	0.2630 **	0.6779 **	0.6483 **	0.5411 **	0.9271 *	0.5482 *	1.0000	0.5577 *
VAR20	0.4538 *	0.4528 **	0.5388 **	0.7418 **	0.8223 **	0.9385 **	0.5468 *	0.8922 *	0.5577 *	1.0000
VAR21	0.3138 *	0.7036 **	0.6055 **	0.6587 **	0.6653 **	0.6109 **	0.4639 *	0.5442 *	0.4828 *	0.6056 *
VAR22	0.3531 *	0.3142 **	0.4160 **	0.7588 **	0.6364 **	0.5760 **	0.5372 *	0.5944 *	0.5395 *	0.5677 *
VAR23	0.3223 *	0.2124 **	0.3099 **	0.7250 **	0.5045 **	0.5031 **	0.5482 *	0.5200 *	0.5533 *	0.4849 *
VAR24	0.3156 *	0.1965 **	0.2850 **	0.7428 **	0.6006 **	0.5519 **	0.4962 *	0.5967 *	0.5007 *	0.5392 *
VAR25	0.3244 *	0.2384 **	0.3492 **	0.8227 **	0.6640 **	0.6241 **	0.5529 *	0.6365 *	0.5569 *	0.6056 *
VAR26	0.3192 *	0.3498 **	0.4109 **	0.6047 **	0.7008 **	0.8331 **	0.4997 *	0.8501 *	0.4839 *	0.7988 *
VAR27	0.1914 *	0.1868 **	0.2724 **	0.6965 **	0.5323 **	0.3899 **	0.4490 *	0.4177 *	0.4405 *	0.3912 *
VAR28	0.2690 *	0.2390 **	0.3298 **	0.7430 **	0.5968 **	0.5020 **	0.4963 *	0.5086 *	0.4858 *	0.4864 *
VAR29	0.2404 *	0.2058 **	0.2777 **	0.7328 **	0.5711 **	0.5246 **	0.4857 *	0.5548 *	0.4873 *	0.5442 *
VAR30	0.2899 *	0.2346 **	0.3440 **	0.8193 **	0.6594 **	0.6171 **	0.5405 *	0.6292 *	0.5448 *	0.6047 *
VAR31	0.3331 *	0.3312 **	0.3832 **	0.6181 **	0.6872 **	0.8071 **	0.5303 *	0.8095 *	0.5216 *	0.8106 *
VAR32	0.3440 *	0.4853 **	0.6259 **	0.7049 **	0.6722 **	0.5904 **	0.4015 *	0.5483 *	0.4210 *	0.5990 *
VAR33	0.2441 *	0.2599 **	0.2981 **	0.3181 **	0.3885 **	0.4369 **	0.2305 *	0.4046 *	0.2580 *	0.4209 *

* Significant to 0.05 level using Bonferroni multiple comparisons criteria.

Table 86. Correlation Coefficients for Foot Dimensions -- Female (cont.)

	VAR21	VAR22	VAR23	VAR24	VAR25	VAR26	VAR27	VAR28	VAR29	VAR30
VAR1	0.6019 *	0.4853 *	0.5382 *	0.6444 *	0.7311 *	0.4223 *	0.6676 *	0.6985 *	0.6313 *	0.7525 *
VAR2	0.5087 *	0.4865 *	0.5632 *	0.6172 *	0.6774 *	0.3288 *	0.6438 *	0.6512 *	0.5970 *	0.6937 *
VAR3	0.3376 *	0.3580 *	0.4089 *	0.5157 *	0.5619 *	0.3576 *	0.5243 *	0.5424 *	0.5170 *	0.5839 *
VAR4	0.3041 *	0.0545	0.0609	0.1114	0.2119 *	0.2112 *	0.2089 *	0.2514 *	0.1852 *	0.2423 *
VAR5	0.2680 *	-0.0322	0.0045	0.0429	0.1354	0.1637	0.1523	0.1805 *	0.1083	0.1596
VAR6	0.3709 *	0.0743	0.1805 *	0.2172 *	0.3359 *	0.2958 *	0.3098 *	0.3571 *	0.2644 *	0.3647 *
VAR7	0.1547	-0.1168	-0.1095	-0.1433	-0.0648	-0.0106	0.0005	0.0101	-0.0943	-0.0398
VAR8	0.3979 *	0.1801 *	0.1434	0.0834	0.2535 *	0.2951 *	0.1801 *	0.2493 *	0.1659	0.2602 *
VAR9	0.2229 *	0.3757 *	0.3539 *	0.3492 *	0.3590 *	0.3312 *	0.2582 *	0.3013 *	0.3040 *	0.3384 *
VAR10	0.3244 *	0.4033 *	0.3612 *	0.3997 *	0.3911 *	0.3398 *	0.3678 *	0.3908 *	0.3716 *	0.3883 *
VAR11	0.3138 *	0.3531 *	0.3223 *	0.3156 *	0.3244 *	0.3192 *	0.1914 *	0.2690 *	0.2404 *	0.2899 *
VAR12	0.7036 *	0.3142 *	0.2124 *	0.1965 *	0.2384 *	0.3498 *	0.1868 *	0.2390 *	0.2058 *	0.2346 *
VAR13	0.6055 *	0.4160 *	0.3099 *	0.2850 *	0.3492 *	0.4109 *	0.2724 *	0.3298 *	0.2777 *	0.3440 *
VAR14	0.6587 *	0.7588 *	0.7250 *	0.7428 *	0.8227 *	0.6047 *	0.6965 *	0.7430 *	0.7328 *	0.8193 *
VAR15	0.6653 *	0.6364 *	0.5045 *	0.6006 *	0.6640 *	0.7008 *	0.5323 *	0.5968 *	0.5711 *	0.6594 *
VAR16	0.6109 *	0.5760 *	0.5031 *	0.5519 *	0.6241 *	0.8331 *	0.3899 *	0.5020 *	0.5246 *	0.6171 *
VAR17	0.4639 *	0.5372 *	0.5482 *	0.4962 *	0.5529 *	0.4997 *	0.4490 *	0.4963 *	0.4857 *	0.5405 *
VAR18	0.5442 *	0.5944 *	0.5200 *	0.5967 *	0.6365 *	0.8501 *	0.4177 *	0.5086 *	0.5548 *	0.6292 *
VAR19	0.4828 *	0.5395 *	0.5533 *	0.5007 *	0.5569 *	0.4839 *	0.4405 *	0.4858 *	0.4873 *	0.5448 *
VAR20	0.6056 *	0.5677 *	0.4849 *	0.5392 *	0.6056 *	0.7988 *	0.3912 *	0.4864 *	0.5442 *	0.6047 *
VAR21	1.0000	0.4755 *	0.4245 *	0.4690 *	0.5354 *	0.4696 *	0.4560 *	0.5061 *	0.4593 *	0.5354 *
VAR22	0.4755 *	1.0000	0.7604 *	0.7560 *	0.7640 *	0.4500 *	0.6313 *	0.6376 *	0.7104 *	0.7389 *
VAR23	0.4245 *	0.7604 *	1.0000	0.7986 *	0.8025 *	0.3657 *	0.6809 *	0.6927 *	0.7415 *	0.7758 *
VAR24	0.4690 *	0.7560 *	0.7986 *	1.0000	0.9092 *	0.4251 *	0.8101 *	0.7873 *	0.8419 *	0.8879 *
VAR25	0.5354 *	0.7640 *	0.8025 *	0.9092 *	1.0000	0.5089 *	0.8447 *	0.8621 *	0.8606 *	0.9712 *
VAR26	0.4696 *	0.4500 *	0.3657 *	0.4251 *	0.5089 *	1.0000	0.3651 *	0.4384 *	0.4437 *	0.5154 *
VAR27	0.4560 *	0.6313 *	0.6809 *	0.8101 *	0.8447 *	0.3651 *	1.0000	0.9007 *	0.7763 *	0.8460 *
VAR28	0.5061 *	0.6376 *	0.6927 *	0.7873 *	0.8621 *	0.4384 *	0.9007 *	1.0000	0.7471 *	0.8600 *
VAR29	0.4593 *	0.7104 *	0.7415 *	0.8419 *	0.8606 *	0.4437 *	0.7763 *	0.7471 *	1.0000	0.8843 *
VAR30	0.5354 *	0.7389 *	0.7758 *	0.8879 *	0.9712 *	0.5154 *	0.8460 *	0.8600 *	0.8843 *	1.0000
VAR31	0.4734 *	0.4826 *	0.4010 *	0.4641 *	0.5410 *	0.8274 *	0.3886 *	0.4574 *	0.4518 *	0.5362 *
VAR32	0.5457 *	0.5560 *	0.5035 *	0.5059 *	0.5530 *	0.4777 *	0.4531 *	0.4813 *	0.4819 *	0.5429 *
VAR33	0.2632 *	0.2441 *	0.1637	0.1571	0.2448 *	0.4080 *	0.0806	0.1367	0.1967 *	0.2426 *

* Significant to 0.05 level using Bonferroni multiple
comparisons criteria.

251

Table 86. Correlation Coefficients for Foot Dimensions -- Female (cont.)

	VAR31	VAR32	VAR33
VAR1	0.4387 *	0.4916 *	0.2195 *
VAR2	0.3572 *	0.3461 *	0.0917
VAR3	0.3420 *	0.3645 *	0.1724 *
VAR4	0.1735 *	0.2241 *	0.1900 *
VAR5	0.1442	0.0947	0.1604
VAR6	0.2824 *	0.2685 *	0.2308 *
VAR7	-0.0289	0.0839	0.0453
VAR8	0.2874 *	0.3543 *	0.2330 *
VAR9	0.3315 *	0.3077 *	0.2075 *
VAR10	0.3426 *	0.3476 *	0.1246
VAR11	0.3331 *	0.3440 *	0.2441 *
VAR12	0.3312 *	0.4853 *	0.2599 *
VAR13	0.3832 *	0.6259 *	0.2981 *
VAR14	0.6181 *	0.7049 *	0.3181 *
VAR15	0.6872 *	0.6722 *	0.3885 *
VAR16	0.8071 *	0.5904 *	0.4369 *
VAR17	0.5303 *	0.4015 *	0.2305 *
VAR18	0.8095 *	0.5483 *	0.4046 *
VAR19	0.5216 *	0.4210 *	0.2580 *
VAR20	0.8106 *	0.5990 *	0.4209 *
VAR21	0.4734 *	0.5457 *	0.2632 *
VAR22	0.4826 *	0.5560 *	0.2441 *
VAR23	0.4010 *	0.5035 *	0.1637
VAR24	0.4641 *	0.5059 *	0.1571
VAR25	0.5410 *	0.5530 *	0.2448 *
VAR26	0.8274 *	0.4777 *	0.4080 *
VAR27	0.3886 *	0.4531 *	0.0806
VAR28	0.4574 *	0.4813 *	0.1367
VAR29	0.4518 *	0.4819 *	0.1967 *
VAR30	0.5362 *	0.5429 *	0.2426 *
VAR31	1.0000	0.4744 *	0.3990 *
VAR32	0.4744 *	1.0000	0.2945 *
VAR33	0.3990 *	0.2945 *	1.0000

* Significant to 0.05 level using Bonferroni multiple comparisons criteria.

Simple Regression Equations

In the preceding section, it was noted that the bivariate distribution provides an indication or estimate of the degree of association between two variables, and that the degree of association could be more precisely measured by the correlation coefficient. The bivariate frequency distribution and the correlation coefficient are also highly suggestive of the functional relationship between two variables. In other words, they provide an indication of the ability of one variable to accurately predict values of another variable. The higher the correlation between two variables, the more accurate the predictive abiity each will have for the other.

The common statistical method for establishing a predictive function is the simple regression equation which expresses a straight line fitted through a bivariate distribution of points. The formula is:

$$Y = a + bX$$

where, Y is the dependent variable (the one being predicted), X is the independent variable (the predictor), a is the intercept or constant (the point on the Y-axis that is crossed by the fitted line), and b is the slope or regression coefficient (ratio created by the increase or decrease of Y divided by the change in X).

To better understand the simple regression equation, again consider the bivariate relationship between Foot Length and BOF Length. With the former as the buttock independent variable (X) and BOF Length as the dependent variable (Y), the regression equation is $Y = 0.709X + 0.55$. In this equation, the slope of the line (0.709) indicates that, for every unit increase in Foot Length, BOF Length will increase by approximately seven-tenths as much. Additionally, the fitted line crosses the Y-axis at 0.55 cm for BOF Length.

Using this formula to estimate BOF Length when Foot Length is, say, 27.0 cm, yields an expected value of 19.7 cm for BOF Length. However, this predicted value for BOF Length should be construed as a _mean_ estimate of the variable when Foot Length is 27.0 cm. The reason is that, given the large sample size from which the equation was derived, not every individual who actually had a Foot Length of 27.0 cm also had a BOF Length of 19.7 cm. In other words, there is variability or error about the mean estimate. Because of this error factor, a regression equation is often accompanied by an associated statistic called the standard error of estimate (SEE). The formula for the SEE is as follows:

$$SEE = SD_y \sqrt{1-r^2}$$

where SD_y is the standard deviation of the dependent variable, and r is the correlation coefficient between the independent and dependent variables. For example, the SEE for the above equation that predicts BOF Length from Foot Length is:

$$SEE = 1.07\sqrt{1-.903^2}$$
$$= 0.46 \text{ cm}$$

Because the SEE is a standard deviation-type statistic, it can be interpreted with respect to the same probabilities as the standard deviation. Thus, using the above example, the SEE of 0.46 cm implies that approximately 66% of all individuals with a Foot Length of 19.7 cm fall within a range of 20.16 cm to 19.24 cm (19.7 ± 0.46 cm). Plus or minus two standard errors of the estimate would encompass about 95% of the individuals with Foot Length of 27.0 cm in a range of 18.78-20.62 cm for BOF Length.

It should be emphasized that the regression equation for the two variables used in the above example is exclusively for predicting BOF Length from Foot Length, and not vice versa. Even though the correlation coefficient stands as a measure of mutual association, the X and Y variables cannot be interchanged in the regression equation. A different regression equation is necessary when the dependent and independent variables are reversed because the values of the Y-intercept and the slope change. By changing the orientation of the X and Y axes in a bivariate plot, the general shape and direction of the distribution will be similar but the slope of the fitted line is now in terms of increases in Foot Length relative to unit changes in BOF Length, and the line will now intercept the axis for Foot Length instead of BOF Length.

Tables 87 to 119 present the simple regression equations derived from the 33 dimensions. Each table corresponds to each dimension as it is used as a dependent variable. The format of the tables lists the number and name for each dimension as an independent knee variable (designated Predictor Variable), corresponding regression coefficients (designated "slope"), Y-intercepts (designated "Const." for constant), and the SEEs. Male and female equations are presented side by side on the same table. When right side measurements are used as the dependent variable, equations with a left side measurement as the predictor variable are excluded from the table unless the left side measurement is the homologue of the right side measurement. The pattern is reversed when a left side measurement is used as the dependent variable. Equations with Stature and Weight as independent variables are included in all tables. Finally, regression equations are presented only in those instances in which correlations, presented previously, were found to be significant at $p \geq 0.05$. This should help the reader prepare for NS (not significant) in the tables.

Table 87. Simple Regression Equations for Estimating Stature (VAR 1)

	Predictor Variable	Male			Female		
		Slope	Const.	SEE	Slope	Const.	SEE
1	Stature	-	-	-	-	-	-
2	Calf Height	2.121	103.00	5.19	1.925	100.80	4.67
3	Ankle Height	3.777	127.74	6.14	4.668	111.36	5.16
4	Med Malleolus Height	5.706	129.38	6.11	4.227	131.54	5.94
5	Lat Malleolus Height	4.532	142.78	6.36	4.101	134.83	5.95
6	Dorsal Arch Height	6.476	118.23	5.78	5.750	115.56	5.58
7	Plantar Arch Height	3.799	164.18	6.78	2.321	155.15	6.44
8	Ball of Foot Height	11.720	129.85	6.33	10.211	125.24	6.13
9	1st Toe Height	5.932	162.65	7.05	5.748	150.69	6.48
10	Maximum Toe Height	8.399	154.32	6.81	7.538	144.49	6.36
11	Outside BOF Height	8.855	149.74	6.71	4.731	149.09	6.50
12	Calf Circumference	0.800	146.13	6.83	0.734	136.02	6.41
13	Ankle Circumference	2.474	120.36	6.25	2.224	115.54	6.10
14	Heel-Ankle Circum	2.886	76.77	5.13	3.170	63.92	4.82
15	Instep Circumference	3.289	89.69	5.66	3.416	82.25	5.51
16	BOF Circum,Right	3.237	94.20	5.86	3.207	89.19	5.61
17	Heel Breadth,Right	5.899	134.30	6.66	5.048	129.88	6.23
18	BOF Breadth,Diagonal	6.364	108.65	6.20	6.578	99.33	5.77
19	Heel Breadth,Left	6.607	129.60	6.54	5.340	128.35	6.19
20	BOF Circum,Left	3.070	98.63	5.93	3.107	91.83	5.66
21	Weight	3.523	149.03	5.90	0.594	126.07	5.26
22	Ankle Length	4.971	121.80	6.20	5.116	112.47	5.76
23	Instep Length	4.176	128.22	6.36	4.908	111.65	5.55
24	BOF Length,Right	4.379	89.58	5.38	3.859	93.36	5.04
25	Foot Length,Right	3.592	78.86	5.19	3.703	71.55	4.49
26	BOF Breadth,Hoz,Right	6.058	114.59	6.35	6.099	106.11	5.97
27	Outside BOF Length	4.641	98.40	5.39	4.479	95.03	4.90
28	5th Toe Length	4.380	80.58	5.13	4.096	81.71	4.71
29	BOF Length,Left	41.880	93.84	5.40	3.883	93.35	5.11
30	Foot Length,Left	3.933	69.89	4.94	3.860	67.84	4.34
31	BOF Breadth,Hoz,Left	6.194	113.24	6.28	5.942	107.74	5.92
32	Bimalleolar Breadth	9.223	108.29	6.11	9.204	101.87	5.74
33	1st-3rd Toe Breadth	4.269	145.00	6.79	3.371	140.15	6.42

Table 88. Simple Regression Equations for Estimating Calf Height (VAR 2)

	Predictor Variable	Male			Female		
		Slope	Const.	SEE	Slope	Const.	SEE
1	Stature	0.224	-5.04	1.68	0.258	-10.09	1.71
2	Calf Height	-	-	-	-	-	-
3	Ankle Height	0.952	22.18	2.13	1.560	14.84	1.98
4	Med Malleolus Height	0.793	27.83	2.27	0.503	28.11	2.39
5	Lat Malleolus Height	0.645	29.59	2.28	0.697	27.12	2.36
6	Dorsal Arch Height	1.206	23.57	2.19	1.379	20.61	2.26
7	Plantar Arch Height	0.445	32.92	2.31	NS*		
8	Ball of Foot Height	2.196	25.68	2.24	2.303	23.46	2.35
9	1st Toe Height	1.602	30.75	2.30	2.920	26.05	2.34
10	Maximum Toe Height	3.359	25.72	2.15	3.695	23.21	2.26
11	Outside BOF Height	2.791	26.09	2.19	2.815	24.12	2.32
12	Calf Circumference	0.162	28.27	2.28	0.218	24.04	2.37
13	Ankle Circumference	0.382	25.73	2.26	0.295	25.57	2.39
14	Heel-Ankle Circum	0.770	7.86	1.90	1.070	-1.36	1.88
15	Instep Circumference	0.894	10.90	2.00	1.177	4.29	2.07
16	BOF Circum,Right	0.732	15.83	2.13	0.872	11.95	2.22
17	Heel Breadth,Right	2.336	17.87	2.08	2.783	14.09	2.10
18	BOF Breadth,Diagonal	1.540	18.05	2.16	1.890	13.75	2.23
19	Heel Breadth,Left	-	-	-	-	-	-
20	BOF Circum,Left	-	-	-	-	-	-
21	Weight	0.091	27.38	2.08	0.184	20.64	2.08
22	Ankle Length	1.602	16.91	2.02	1.878	13.58	2.11
23	Instep Length	1.504	17.18	2.00	1.881	12.47	1.99
24	BOF Length,Right	1.326	8.19	1.83	1.354	7.69	1.90
25	Foot Length,Right	1.071	5.40	1.80	1.257	1.07	1.77
26	BOF Breadth,Hoz,Right	1.472	19.43	2.18	1.739	15.82	2.28
27	Outside BOF Length	1.432	10.43	1.82	1.582	8.11	1.84
28	5th Toe Length	1.320	5.61	1.77	1.399	4.34	1.83
29	BOF Length,Left	-	-	-	-	-	-
30	Foot Length,Left	-	-	-	-	-	-
31	BOF Breadth,Hoz,Left	-	-	-	-	-	-
32	Bimalleolar Breadth	1.814	21.01	2.21	2.374	16.25	2.26
33	1st-3rd Toe Breadth	0.178	33.00	2.32	0.516	28.40	2.40

*Not significant at p=0.05

256

Table 89. Simple Regression Equations for Estimating Ankle Height (VAR 3)

	Predictor Variable	Male			Female		
		Slope	Const.	SEE	Slope	Const.	SEE
1	Stature	0.070	0.45	0.83	0.083	-2.61	0.69
2	Calf Height	0.166	6.99	0.89	0.207	4.26	0.72
3	Ankle Height	-	-	-	-	-	-
4	Med Malleolus Height	0.448	9.07	0.93	0.470	7.44	0.82
5	Lat Malleolus Height	0.354	10.13	0.94	0.443	7.90	0.82
6	Dorsal Arch Height	0.521	8.08	0.91	0.646	5.61	0.78
7	Plantar Arch Height	0.232	12.00	0.96	0.192	10.26	0.87
8	Ball of Foot Height	0.816	9.51	0.94	0.829	7.84	0.86
9	1st Toe Height	1.010	10.48	0.95	0.861	9.14	0.86
10	Maximum Toe Height	0.707	10.90	0.95	1.093	8.30	0.84
11	Outside BOF Height	0.952	9.91	0.93	0.557	9.32	0.87
12	Calf Circumference	NS*			NS		
13	Ankle Circumference	NS			NS		
14	Heel-Ankle Circum	0.239	4.51	0.88	0.327	0.71	0.75
15	Instep Circumference	0.267	5.72	0.90	0.354	2.58	0.79
16	BOF Circum,Right	0.270	5.90	0.91	0.347	2.95	0.80
17	Heel Breadth,Right	0.409	9.83	0.96	0.591	7.07	0.84
18	BOF Breadth,Diagonal	0.544	6.97	0.92	0.762	3.58	0.80
19	Heel Breadth,Left	-	-	-	-	-	-
20	BOF Circum,Left	-	-	-	-	-	-
21	Weight	0.021	11.10	0.94	0.044	8.14	0.83
22	Ankle Length	0.491	7.38	0.91	0.503	5.96	0.82
23	Instep Length	0.393	8.23	0.92	0.497	5.73	0.80
24	BOF Length,Right	0.431	4.22	0.85	0.412	3.51	0.75
25	Foot Length,Right	0.340	3.54	0.85	0.379	1.56	0.73
26	BOF Breadth,Hoz,Right	0.491	7.74	0.94	0.688	4.52	0.82
27	Outside BOF Length	0.448	5.23	0.86	0.469	3.82	0.75
28	5th Toe Length	0.406	3.89	0.86	0.424	2.52	0.74
29	BOF Length,Left	-	-	-	-	-	-
30	Foot Length,Left	-	-	-	-	-	-
31	BOF Breadth,Hoz,Left	-	-	-	-	-	-
32	Bimalleolar Breadth	0.871	6.34	0.91	0.910	4.89	0.82
33	1st-3rd Toe Breadth	0.175	11.44	0.97	0.353	8.54	0.86

*Not significant at p=0.05

257

Table 90.   Simple Regression Equations for Estimating Medial Malleolus Height
            (VAR 4)

	Predictor Variable	Male			Female		
		Slope	Const.	SEE	Slope	Const.	SEE
1	Stature	0.048	-.26	0.56	0.044	0.03	0.61
2	Calf Height	0.063	5.96	0.64	0.039	5.93	0.67
3	Ankle Height	0.202	5.54	0.62	0.276	4.18	0.63
4	Med Malleolus Height	—	—	—	—	—	—
5	Lat Malleolus Height	0.639	3.48	0.46	0.615	3.12	0.52
6	Dorsal Arch Height	0.736	1.59	0.44	0.720	1.37	0.51
7	Plantar Arch Height	0.702	5.99	0.50	0.623	5.37	0.56
8	Ball of Foot Height	1.190	3.46	0.56	1.451	1.97	0.58
9	1st Toe Height	0.469	7.08	0.65	NS[*]		
10	Maximum Toe Height	0.306	7.34	0.65	NS		
11	Outside BOF Height	0.355	7.08	0.65	NS		
12	Calf Circumference	0.063	5.78	0.63	0.067	4.81	0.66
13	Ankle Circumference	0.186	3.95	0.60	0.234	2.30	0.62
14	Heel-Ankle Circum	0.142	3.24	0.61	0.147	2.62	0.64
15	Instep Circumference	0.149	4.21	0.62	0.167	3.28	0.65
16	BOF Circum,Right	0.152	4.28	0.62	0.186	2.96	0.64
17	Heel Breadth,Right	NS			NS		
18	BOF Breadth,Diagonal	0.217	5.83	0.64	0.261	4.69	0.66
19	Heel Breadth,Left	—	—	—	—	—	—
20	BOF Circum,Left	—	—	—	—	—	—
21	Weight	0.020	6.60	0.61	0.031	5.32	0.64
22	Ankle·Length	NS			NS		
23	Instep Length	NS			NS		
24	BOF Length,Right	0.118	5.78	0.64	0.068	5.96	0.67
25	Foot Length,Right	0.122	4.82	0.63	0.110	4.50	0.66
26	BOF Breadth,Hoz,Rt	0.210	5.99	0.64	0.312	4.32	0.66
27	Outside BOF Length	0.183	5.06	0.63	0.143	5.04	0.66
28	5th Toe Length	0.178	4.26	0.62	0.151	4.22	0.65
29	BOF Length,Left	—	—	—	—	—	—
30	Foot Length,Left	—	—	—	—	—	—
31	BOF Breadth,Hoz,Left	—	—	—	—	—	—
32	Bimalleolar Breadth	0.331	5.70	0.64	0.429	4.38	0.66
33	1st-3rd Toe Breadth	0.347	5.62	0.63	0.298	5.25	0.66

[*]Not significant at p=0.05

Table 91. Simple Regression Equations for Estimating Lateral Malleolus Height (VAR 5)

	Predictor Variable	Male			Female		
		Slope	Const.	SEE	Slope	Const.	SEE
1	Stature	0.047	-0.94	0.64	0.044	-0.62	0.62
2	Calf Height	0.063	5.10	0.71	0.056	4.80	0.67
3	Ankle Height	0.198	4.75	0.70	0.270	3.66	0.64
4	Med Malleolus Height	0.788	0.87	0.51	0.640	2.00	0.53
5	Lat Malleolus Height	-	-	-	-	-	-
6	Dorsal Arch Height	0.691	1.13	0.57	0.745	0.59	0.52
7	Plantar Arch Height	0.707	5.12	0.59	0.654	4.70	0.57
8	Ball of Foot Height	1.148	2.77	0.65	1.241	2.14	0.62
9	1st Toe Height	NS*			NS		
10	Maximum Toe Height	NS			NS		
11	Outside BOF Height	NS			NS		
12	Calf Circumference	0.040	5.78	0.72	0.060	4.47	0.68
13	Ankle Circumference	0.167	3.52	0.69	0.162	3.21	0.66
14	Heel Ankle Circuum	0.119	3.18	0.70	0.118	2.94	0.66
15	Instep Circumference	0.111	4.36	0.71	0.131	3.54	0.67
16	BOF Circum,Right	0.128	4.04	0.71	0.145	3.30	0.67
17	Heel Breadth,Right	NS			NS		
18	BOF Breadth,Diagonal	NS			0.178	4.90	0.68
19	Heel Breadth,Left	-	-	-	-	-	-
20	BOF Circum,Left	-	-	-	-	-	-
21	Weight	0.014	6.19	0.71	0.028	4.93	0.66
22	Ankle Length	NS			NS		
23	Instep Length	NS			NS		
24	BOF Length,Right	NS			NS		
25	Foot Length,Right	0.80	5.12	0.72	0.071	4.84	0.68
26	BOF Breadth,Hoz,Right	NS			0.246	4.34	0.68
27	Outside BOF Length	0.140	4.93	0.71	0.106	5.00	0.68
28	5th Toe Length	0.136	4.32	0.71	0.110	4.43	0.68
29	BOF Length,Left	-	-	-	-	-	-
30	Foot Length,Left	-	-	-	-	-	-
31	BOF Breadth,Hoz,Left	-	-	-	-	-	-
32	Bimalleolar Breadth	NS			0.185	5.38	0.68
33	1st-3rd Toe Breadth	0.269	5.33	0.71	0.257	4.93	0.68

*Not significant at p=0.05

Table 92. Simple Regression Equations for Estimating Dorsal Arch Height (VAR 6)

Predictor Variable	Male Slope	Male Const.	Male SEE	Female Slope	Female Const.	Female SEE
1 Stature	0.054	-0.55	0.53	0.049	0.14	0.51
2 Calf Height	0.095	5.63	0.61	0.087	5.28	0.57
3 Ankle Height	0.234	5.90	0.61	0.309	4.71	0.54
4 Med Malleolus Height	0.730	2.95	0.44	0.586	3.85	0.46
5 Lat Malleolus Height	0.556	4.84	0.51	0.582	4.21	0.46
6 Dorsal Arch Height	—	—	—	—	—	—
7 Plantar Arch Height	0.726	6.67	0.48	0.627	6.24	0.48
8 Ball of Foot Height	1.337	3.64	0.53	1.499	2.68	0.49
9 1st Toe Height	0.591	7.58	0.64	0.284	7.50	0.60
10 Maximum Toe Height	0.463	7.70	0.64	0.343	7.26	0.60
11 Outside BOF Height	0.432	7.61	0.64	0.460	6.81	0.60
12 Calf Cicumference	0.062	6.60	0.63	0.074	5.44	0.59
13 Ankle Circumference	0.193	4.56	0.59	0.215	3.58	0.56
14 Heel-Ankle Circum	0.191	2.34	0.56	0.217	1.34	0.52
15 Instep Circumference	0.209	3.41	0.59	0.235	2.58	0.55
16 BOF Circum,Right	0.204	3.74	0.60	0.227	2.91	0.56
17 Heel Breadth,Right	0.283	6.89	0.64	0.218	6.67	0.60
18 BOF Breadth,Diagonal	0.345	5.24	0.62	0.380	4.44	0.58
19 Heel Breadth,Left	—	—	—	—	—	—
20 BOF Circum,Left	—	—	—	—	—	—
21 Weight	0.021	7.26	0.60	0.034	6.02	0.56
22 Ankle Length	NS*			NS		
23 Instep Length	0.097	7.77	0.65	0.152	6.50	0.60
24 BOF Length,Right	0.154	5.85	0.63	0.120	5.92	0.59
25 Foot Length,Right	0.178	4.08	0.60	0.157	4.23	0.57
26 BOF Breadth,Hoz,Right	0.340	5.44	0.62	0.394	4.45	0.58
27 Outside BOF Length	0.212	5.34	0.62	0.192	5.19	0.58
28 5th Toe Length	0.213	4.25	0.60	0.193	4.27	0.57
29 BOF Length,Left	—	—	—	—	—	—
30 Foot Length,Left	—	—	—	—	—	—
31 BOF Breadth,Hoz,Left	—	—	—	—	—	—
32 Bimalleolar Breadth	0.521	5.07	0.62	0.463	5.03	0.58
33 1st-3rd Toe Breadth	0.361	6.28	0.62	0.327	5.95	0.59

*Not significant at p=0.05

Table 93. Simple Regression Equations for Estimating Plantar Arch Height (VAR 7)

		Male			Female		
	Predictor Variable	Slope	Const.	SEE	Slope	Const.	SEE
1	Stature	0.027	−1.74	0.57	0.019	−0.16	0.58
2	Calf Height	0.030	2.00	0.60	NS		
3	Ankle Height	0.090	1.89	0.60	0.088	1.94	0.59
4	Med Malleolus Height	0.601	−1.85	0.46	0.485	−0.59	0.50
5	Lat Malleolus Height	0.491	−0.53	0.49	0.489	−0.33	0.49
6	Dorsal Arch Height	0.627	−2.53	0.45	0.600	−1.94	0.47
7	Plantar Arch Height	−	−	−	−	−	−
8	Ball of Foot Height	1.001	−0.88	0.53	1.203	−1.43	0.52
9	1st Toe Height	NS*			−0.275	3.42	0.59
10	Maximum Toe Height	NS			NS		
11	Outside BOF Height	NS			NS		
12	Calf Circumference	NS			0.038	1.56	0.59
13	Ankle Circumference	0.106	0.65	0.59	0.153	−0.30	0.57
14	Heel-Ankle Circum	0.077	0.39	0.59	0.058	1.10	0.59
15	Instep Circumference	0.058	1.51	0.60	NS		
16	BOF Circum,Right	0.059	1.54	0.60	NS		
17	Heel Breadth,Right	NS			−0.182	4.04	0.59
18	BOF Breadth,Diagonal	NS			NS		
19	Heel Breadth,Left	−	−	−	−	−	−
20	BOF Circum,Left	−	−	−	−	−	−
21	Weight	0.010	2.28	0.59	0.014	2.06	0.59
22	Ankle Length	NS			−0.111	3.96	0.59
23	Instep Length	−0.120	4.40	0.60	−0.090	3.81	0.59
24	BOF Length,Right	NS			−0.077	4.26	0.59
25	Foot Length,Right	NS			NS		
26	BOF Breadth,Hoz,Right	NS			NS		
27	Outside BOF Length	NS			NS		
28	5th Toe Length	NS			NS		
29	BOF Length,Left	−	−	−	−	−	−
30	Foot Length,Left	−	−	−	−	−	−
31	BOF Breadth,Hoz,Left	−	−	−	−	−	−
32	Bimalleolar Breadth	NS			NS		
33	1st-3rd Toe Breadth	0.131	2.09	0.60	NS		

*Not significant at p=0.05

Table 94. Simple Regression Equations for Estimating BOF Height (VAR 8)

		Male			Female		
Predictor Variable		Slope	Const.	SEE	Slope	Const.	SEE
1	Stature	0.018	0.65	0.25	0.013	1.45	0.22
2	Calf Height	0.033	2.78	0.27	0.022	2.88	0.23
3	Ankle Height	0.070	3.02	0.28	0.060	2.93	0.23
4	Med Malleolus Height	0.225	2.08	0.24	0.180	2.30	0.20
5	Lat Malleolus Height	0.176	2.63	0.25	0.148	2.61	0.21
6	Dorsal Arch Height	0.255	1.65	0.23	0.228	1.75	0.19
7	Plantar Arch Height	0.221	3.24	0.25	0.192	3.03	0.21
8	Ball of Foot Height	-	-	-	-	-	-
9	1st Toe Height	0.346	3.15	0.28	0.227	3.14	0.23
10	Maximum Toe Height	0.402	2.89	0.26	0.288	2.92	0.23
11	Outside BOF Height	0.338	2.92	0.27	0.331	2.69	0.22
12	Calf Circumference	0.048	2.13	0.25	0.042	2.11	0.22
13	Ankle Circumference	0.118	1.26	0.23	0.102	1.45	0.21
14	Heel-Ankle Circum	0.094	0.70	0.23	0.074	1.29	0.21
15	Instep Circumference	0.120	0.76	0.24	0.100	1.24	0.21
16	BOF Circum,Right	0.131	0.60	0.23	0.096	1.40	0.21
17	Heel Breadth,Right	0.184	2.62	0.27	0.121	2.82	0.23
18	BOF Breadth,Diagonal	0.208	1.72	0.26	0.129	2.36	0.23
19	Heel Breadth,Left	-	-	-	-	-	-
20	BOF Circum,Left	-	-	-	-	-	-
21	Weight	0.011	3.06	0.25	0.014	2.73	0.22
22	Ankle Length	0.134	2.45	0.27	0.068	2.93	0.23
23	Instep Length	0.084	2.95	0.28	0.047	3.10	0.23
24	BOF Length,Right	0.065	2.62	0.28	NS		
25	Foot Length,Right	0.087	1.56	0.26	0.046	2.46	0.23
26	BOF Breadth,Hoz,Right	0.215	1.74	0.26	0.153	2.18	0.23
27	Outside BOF Length	0.085	2.49	0.27	0.043	2.94	0.23
28	5th Toe Length	0.091	1.94	0.26	0.052	2.56	0.23
29	BOF Length,Left	-	-	-	-	-	-
30	Foot Length,Left	-	-	-	-	-	-
31	BOF Breadth,Hoz,Left	-	-	-	-	-	-
32	Bimalleolar Breadth	0.306	1.67	0.26	0.238	2.03	0.22
33	1st-3rd Toe Breadth	0.193	2.53	0.26	0.129	2.76	0.23

Table 95. Simple Regression Equations for Estimating 1st Toe Height (VAR 9)

Predictor Variable	Male			Female		
	Slope	Const.	SEE	Slope	Const.	SEE
1 Stature	0.005	1.30	0.21	0.005	1.07	0.20
2 Calf Height	0.013	1.75	0.21	0.020	1.29	0.20
3 Ankle Height	0.047	1.60	0.20	0.046	1.45	0.20
4 Med Malleolus Height	0.048	1.81	0.21	NS*		
5 Lat Malleolus Height	NS			NS		
6 Dorsal Arch Height	0.062	1.65	0.21	0.031	1.69	0.20
7 Plantar Arch Height	NS			-0.032	2.03	0.20
8 Ball of Foot Height	0.189	1.46	0.20	0.165	1.35	0.20
9 1st Toe Height	-	-	-	-	-	-
10 Maximum Toe Height	0.166	1.78	0.20	0.366	1.10	0.18
11 Outside BOF Height	0.241	1.49	0.20	0.311	1.10	0.19
12 Calf Circumference	0.017	1.56	0.20	0.012	1.53	0.20
13 Ankle Circumference	0.037	1.38	0.20	0.029	1.34	0.20
14 Heel-Ankle Circum	0.043	0.72	0.20	0.058	1.36	0.18
15 Instep Circumference	0.057	0.70	0.20	0.082	0.02	0.18
16 BOF Circum,Right	0.060	0.70	0.20	0.072	0.32	0.19
17 Heel Breadth,Right	0.117	1.38	0.20	0.204	0.65	0.18
18 BOF Breadth,Diagonal	0.116	0.98	0.20	0.146	0.56	0.19
19 Heel Breadth,Left	-	-	-	-	-	-
20 BOF Circum,Left	-	-	-	-	-	-
21 Weight	0.005	1.85	0.20	0.007	1.54	0.20
22 Ankle Length	0.071	1.42	0.20	0.121	0.77	0.19
23 Instep Length	0.056	1.57	0.20	0.099	0.93	0.19
24 BOF Length,Right	0.051	1.20	0.20	0.064	0.80	0.19
25 Foot Length,Right	0.041	1.08	0.20	0.056	0.58	0.19
26 BOF Breadth,Hoz,Right	0.104	1.15	0.20	0.147	0.60	0.19
27 Outside BOF Length	0.039	1.55	0.21	0.053	1.15	0.20
28 5th Toe Length	0.040	1.33	0.20	0.054	0.88	0.19
29 BOF Length,Left	-	-	-	-	-	-
30 Foot Length,Left	-	-	-	-	-	-
31 BOF Breadth,Hoz,Left	-	-	-	-	-	-
32 Bimalleolar Breadth	0.164	1.00	0.20	0.177	0.79	0.19
33 1st-3rd Toe Breadth	0.080	1.62	0.20	0.098	1.31	0.20

*Not significant at p=0.05

263

Table 96. Simple Regression Equations for Estimating Maximum Toe Height
(VAR 10)

Predictor Variable	Male			Female		
	Slope	Const.	SEE	Slope	Const.	SEE
1 Stature	0.011	0.58	0.25	0.009	0.89	0.22
2 Calf Height	0.042	1.09	0.24	0.032	1.29	0.21
3 Ankle Height	0.051	1.90	0.26	0.071	1.53	0.22
4 Med Malleolus Height	0.049	2.15	0.26	NS*		
5 Lat Malleolus Height	NS			NS		
6 Dorsal Arch Height	0.074	1.89	0.26	0.047	1.92	0.22
7 Plantar Arch Height	NS			NS		
8 Ball of Foot Height	0.338	1.22	0.24	0.258	1.38	0.22
9 1st Toe Height	0.255	1.98	0.26	0.451	1.43	0.20
10 Maximum Toe Height	–	–	–	–	–	–
11 Outside BOF Height	0.457	1.21	0.23	0.438	1.12	0.20
12 Calf Circumference	0.038	1.13	0.24	0.025	1.43	0.22
13 Ankle Circumference	0.081	0.74	0.24	0.044	1.39	0.22
14 Heel-Ankle Circum	0.080	-0.20	0.22	0.073	0.05	0.20
15 Instep Circumference	0.112	-0.38	0.21	0.111	-0.28	0.19
16 BOF Circum,Right	0.094	0.17	0.23	0.083	0.42	0.20
17 Heel Breadth,Right	0.299	0.44	0.22	0.257	0.67	0.20
18 BOF Breadth,Diagonal	0.204	0.39	0.23	0.176	0.63	0.21
19 Heel Breadth,Left	–	–	–	–	–	–
20 BOF Circum,Left	–	–	–	–	–	–
21 Weight	0.011	1.70	0.23	0.011	1.64	0.21
22 Ankle Length	0.175	0.64	0.23	0.145	0.90	0.20
23 Instep Length	0.141	0.94	0.24	0.112	1.15	0.21
24 BOF Length,Right	0.102	0.54	0.24	0.082	0.86	0.20
25 Foot Length,Right	0.078	0.46	0.24	0.067	0.66	0.21
26 BOF Breadth,Hoz,Right	0.196	0.56	0.24	0.167	0.77	0.21
27 Ouside BOF Length	0.107	0.77	0.24	0.084	1.05	0.21
28 5th Toe Length	0.101	0.35	0.23	0.078	0.78	0.21
29 BOF Length,Left	–	–	–	–	–	–
30 Foot Length,Left	–	–	–	–	–	–
31 BOF Breadth,Hoz,Left	–	–	–	–	–	–
32 Bimalleolar Breadth	0.221	0.93	0.24	0.222	0.86	0.21
33 1st-3rd Toe Breadth	NS			0.065	1.88	0.22

*Not significant at p=0.05

264

Table 97. Simple Regression Equations For Estimating Outside BOF Height
(VAR 11)

Predictor Variable	Male			Female		
	Slope	Const.	SEE	Slope	Const.	SEE
1 Stature	0.014	0.52	0.26	0.006	1.76	0.23
2 Calf Height	0.041	1.52	0.26	0.026	1.88	0.22
3 Ankle Height	0.080	1.92	0.27	0.038	2.28	0.23
4 Med Malleolus Height	0.066	2.40	0.28	NS*		
5 Lat Malleolus Height	NS			NS		
6 Dorsal Arch Height	0.081	2.21	0.28	0.066	2.16	0.23
7 Plantar Arch Height	NS			NS		
8 Ball of Foot Height	0.331	1.64	0.26	0.314	1.57	0.22
9 1st Toe Height	0.433	1.98	0.27	0.405	1.91	0.22
10 Maximum Toe Height	0.533	1.58	0.24	0.462	1.63	0.20
11 Outside BOF Height	–	–	–	–	–	–
12 Calf Circumference	0.048	1.17	0.25	0.035	1.46	0.22
13 Ankle Circumference	0.090	0.92	0.25	0.062	1.39	0.22
14 Heel-Ankle Circum	0.087	-0.06	0.24	0.073	0.45	0.21
15 Instep Circumference	0.126	-0.36	0.23	0.112	0.10	0.20
16 BOF Circum,Right	0.116	0.004	0.24	0.092	0.60	0.21
17 Heel Breadth,Right	0.307	0.78	0.25	0.246	1.14	0.20
18 BOF Breadth,Diagonal	0.229	0.52	0.25	0.163	1.14	0.22
19 Heel Breadth,Left	–	–	–	–	–	–
20 BOF Circum,Left	–	–	–	–	–	–
21 Weight	0.015	1.81	0.22	0.011	2.04	0.22
22 Ankle Length	0.180	0.98	0.25	0.130	1.44	0.22
23 Instep Length	0.138	1.36	0.26	0.103	1.64	0.22
24 BOF Length,Right	0.114	0.69	0.25	0.066	1.52	0.22
25 Foot Length,Right	0.084	0.66	0.26	0.058	1.29	0.22
26 BOF Breadth,Hoz,Right	0.203	0.89	0.26	0.161	1.22	0.22
27 Outside BOF Length	0.096	1.33	0.26	0.045	2.03	0.23
28 5th Toe Length	0.092	0.93	0.26	0.055	1.62	0.22
29 BOF Length	–	–	–	–	–	–
30 Foot Length,Left	–	–	–	–	–	–
31 BOF Breadth,Hoz,Left	–	–	–	–	–	–
32 Bimalleolar Breadth	0.310	0.67	0.25	0.225	1.23	0.22
33 1st-3rd Toe Breadth	0.141	1.92	0.27	0.131	1.85	0.22

*Not significant at p=0.05

265

Table 98. Simple Regression Equations for Estimating Calf Circumference (VAR 12)

Predictor Variable	Male			Female		
	Slope	Const.	SEE	Slope	Const.	SEE
1 Stature	0.111	17.50	2.54	0.070	23.76	1.99
2 Calf Height	0.213	29.65	2.62	0.156	30.22	2.00
3 Ankle Height	NS*			NS		
4 Med Malleolus Height	1.046	28.47	2.57	0.617	30.75	2.00
5 Lat Malleolus Height	0.539	33.05	2.64	0.532	31.67	2.01
6 Dorsal Arch Height	1.031	27.82	2.58	0.838	28.43	1.98
7 Plantar Arch Height	NS			0.447	33.88	2.02
8 Ball of Foot Height	4.230	20.42	2.38	3.121	23.98	1.90
9 1st Toe Height	2.790	30.82	2.60	1.200	32.85	2.03
10 Maximum Toe Height	3.990	26.80	2.45	2.054	30.45	1.99
11 Outside BOF Height	4.247	24.51	2.38	2.759	27.73	1.94
12 Calf Circumference	-	-	-	-	-	-
13 Ankle Circumference	1.473	4.01	1.67	1.256	9.01	1.48
14 Heel-Ankle Circum	0.852	7.76	2.22	0.643	15.31	1.83
15 Instep Circumference	1.346	1.76	1.97	1.029	11.19	1.73
16 BOF Circum,Right	1.278	4.78	2.11	0.860	15.68	1.82
17 Heel Breadth,Right	2.802	17.30	2.35	1.432	26.10	1.95
18 BOF Breadth,Diagonal	2.603	9.54	2.23	1.160	19.87	1.89
19 Heel Breadth,Left	-	-	-	-	-	-
20 BOF Circum,Left	-	-	-	-	-	-
21 Weight	0.182	23.21	1.65	0.215	22.21	1.45
22 Ankle Length	1.697	18.56	2.37	1.026	25.27	1.94
23 Instep Length	1.102	24.43	2.52	0.600	29.04	1.99
24 BOF Length,Right	0.987	17.56	2.44	0.365	28.70	2.00
25 Foot Length,Right	0.788	15.72	2.43	0.374	26.05	1.98
26 BOF Breadth,Hoz,Right	2.451	12.23	2.30	1.566	20.87	1.91
27 Outside BOF Length	0.822	23.27	2.53	0.388	29.38	2.00
28 5th Toe Length	0.850	18.50	2.48	0.434	26.68	1.98
29 BOF Length,Left	-	-	-	-	-	-
30 Foot Length,Left	-	-	-	-	-	-
31 BOF Breadth,Hoz,Left	-	-	-	-	-	-
32 Bimalleolar Breadth	3.484	11.50	2.26	2.816	16.82	1.78
33 1st-3rd Toe Breadth	1.552	25.80	2.53	1.237	27.21	1.97

*Not significant at p=0.05

Table 99. Simple Regression Equations for Estimating Ankle Circumference (VAR 13)

Predictor Variable	Male			Female		
	Slope	Const.	SEE	Slope	Const.	SEE
1 Stature	0.096	5.55	1.23	0.064	10.50	1.03
2 Calf Height	0.140	17.57	1.37	0.063	18.82	1.10
3 Ankle Height	NS*			NS		
4 Med Malleolus Height	0.862	15.38	1.29	0.642	16.21	1.03
5 Lat Malleolus Height	0.628	17.81	1.33	0.428	18.00	1.08
6 Dorsal Arch Height	0.901	14.38	1.28	0.726	14.98	1.02
7 Plantar Arch Height	0.576	20.63	1.36	0.541	19.26	1.07
8 Ball of Foot Height	2.894	11.05	1.14	2.276	12.66	0.98
9 1st Toe Height	1.643	18.76	1.36	0.879	19.11	1.10
10 Maximum Toe Height	2.346	16.40	1.27	1.078	18.34	1.09
11 Outside BOF Height	2.247	15.78	1.26	1.464	16.87	1.06
12 Calf Circumference	0.412	7.16	0.88	0.375	7.62	0.81
13 Ankle Circumference	-	-	-	-	-	-
14 Heel-Ankle Circum	0.593	2.04	0.96	0.467	6.40	0.90
15 Instep Circumference	0.768	2.29	0.97	0.609	6.63	0.91
16 BOF Circum,Right	0.752	3.43	1.03	0.571	7.88	0.93
17 Heel Breadth,Right	1.492	11.90	1.24	0.633	16.81	1.08
18 BOF Breadth,Diagonal	1.453	7.06	1.15	1.046	10.88	1.00
19 Heel Breadth,Left	-	-	-	-	-	-
20 BOF Circum,Left	-	-	-	-	-	-
21 Weight	0.086	15.90	1.01	0.101	14.72	0.89
22 Ankle Length	1.135	10.07	1.15	0.743	13.65	1.01
23 Instep Length	0.789	13.31	1.26	0.479	15.92	1.06
24 BOF Length,Right	0.650	9.59	1.22	0.289	15.69	1.07
25 Fot Length,Right	0.531	8.05	1.20	0.300	13.52	1.04
26 BOF Breadth,Hoz,Right	1.331	8.94	1.21	1.005	11.63	1.02
27 Outside BOF Length	0.601	12.36	1.27	0.309	16.20	1.07
28 5th Toe Length	0.601	9.31	1.23	0.328	14.41	1.05
29 BOF Length,Left	-	-	-	-	-	-
30 Foot Length,Left	-	-	-	-	-	-
31 BOF Breadth,Hoz,Left	-	-	-	-	-	-
32 Bimalleolar Breadth	2.185	6.40	1.10	1.984	7.89	0.87
33 1st-3rd Toe Breadth	1.189	13.82	1.26	0.776	15.83	1.06

*Not significant at p=0.05

Table 100. Simple Regression Equations for Estimating Heel-Ankle Circumference (VAR 14)

Predictor Variable	Male			Female		
	Slope	Const.	SEE	Slope	Const.	SEE
1 Stature	0.168	4.66	1.24	0.146	7.21	1.04
2 Calf Height	0.426	19.66	1.42	0.368	19.21	1.10
3 Ankle Height	0.756	24.68	1.57	0.850	21.70	1.20
4 Med Malleolus Height	0.994	26.21	1.60	0.652	26.22	1.34
5 Lat Malleolus Height	0.676	29.37	1.66	0.502	27.59	1.37
6 Dorsal Arch Height	1.334	22.35	1.49	1.181	21.39	1.22
7 Plantar Arch Height	0.630	32.37	1.69	0.329	29.94	1.40
8 Ball of Foot Height	3.464	20.72	1.42	2.654	21.38	1.27
9 1st Toe Height	2.910	27.87	1.62	2.868	25.32	1.29
10 Maximum Toe Height	3.512	25.33	1.47	2.900	24.22	1.26
11 Outside BOF Height	3.285	24.64	1.46	2.735	23.52	1.27
12 Calf Circumference	0.359	21.00	1.44	0.309	20.02	1.27
13 Ankle Circumference	0.895	14.25	1.18	0.751	15.26	1.14
14 Heel-Ankle Circum	-	-	-	-	-	-
15 Instep Circumference	1.103	5.42	0.91	1.113	4.97	0.79
16 BOF Circum,Right	1.076	7.19	1.06	0.993	8.40	0.93
17 Heel Breadth,Right	2.536	16.47	1.31	2.260	16.58	1.04
18 BOF Breadth,Diagonal	2.139	11.74	1.24	2.090	11.03	0.99
19 Heel Breadth,Left	-	-	-	-	-	-
20 BOF Circum,Left	-	-	-	-	-	-
21 Weight	0.107	26.16	1.21	0.140	22.48	1.06
22 Ankle Length	1.762	15.17	1.18	1.719	14.30	0.92
23 Instep Length	1.384	18.54	1.35	1.420	16.36	0.97
24 BOF Length,Right	1.168	11.31	1.19	0.956	13.93	0.95
25 Foot Length,Right	0.954	8.56	1.13	0.895	9.06	0.80
26 BOF Breadth,Hoz,Rt	2.011	13.99	1.34	1.876	13.74	1.13
27 Outside BOF Length	1.136	15.36	1.29	1.004	15.92	1.02
28 5th Toe Length	1.114	10.09	1.18	0.936	12.58	0.95
29 BOF Length,Left	-	-	-	-	-	-
30 Foot Length,Left	-	-	-	-	-	-
31 BOF Breadth,Hoz,Left	-	-	-	-	-	-
32 Bimalleolar Breadth	2.866	13.33	1.28	2.836	12.42	1.00
33 1st-3rd Toe Breadth	1.237	25.38	1.60	1.050	24.14	1.34

Table 101. Simple Regression Equations for Estimating Instep Circumference (VAR 15)

Predictor Variable	Male			Female		
	Slope	Const.	SEE	Slope	Const.	SEE
1 Stature	0.114	6.16	1.05	0.088	9.14	0.88
2 Calf Height	0.293	16.10	1.14	0.225	16.17	0.90
3 Ankle Height	0.501	19.80	1.24	0.510	17.79	0.95
4 Med Malleolus Height	0.619	21.13	1.27	0.410	20.36	1.02
5 Lat Malleolus Height	0.374	23.44	1.30	0.308	21.27	1.03
6 Dorsal Arch Height	0.873	18.41	1.20	0.709	17.60	0.96
7 Plantar Arch Height	0.281	25.30	1.32	NS*		
8 Ball of Foot Height	2.633	15.85	1.10	1.992	16.16	0.94
9 1st Toe Height	2.292	21.11	1.24	2.244	18.94	0.95
10 Maximum Toe Height	2.912	18.74	1.09	2.448	17.66	0.90
11 Outside BOF Height	2.809	17.92	1.07	2.334	17.01	0.91
12 Calf Circumference	0.336	13.72	0.98	0.275	13.64	0.89
13 Ankle Circumference	0.686	10.79	0.92	0.544	11.97	0.86
14 Heel-Ankle Circum	0.654	3.74	0.70	0.618	4.22	0.59
15 Instep Cirumference	–	–	–	–	–	–
16 BOF Circum,Right	0.897	3.56	0.69	0.810	4.95	0.60
17 Heel-Breadth,Right	1.949	12.48	1.01	1.620	13.04	0.80
18 BOF Breadth,Diagonal	1.881	6.33	0.81	1.692	7.22	0.67
19 Heel Breadth,Left	–	–	–	–	–	–
20 BOF Circum,Left	–	–	–	–	–	–
21 Weight	0.088	19.50	0.87	0.105	16.97	0.79
22 Ankle Length	1.266	12.43	0.97	1.074	12.94	0.81
23 Instep Length	0.922	15.67	1.12	0.736	15.77	0.91
24 BOF Length,Right	0.858	9.28	0.96	0.576	13.08	0.84
25 Foot Length,Right	0.695	7.42	0.93	0.538	10.17	0.79
26 BOF Breadth,Hoz,Right	1.769	8.31	0.92	1.620	8.50	0.75
27 Outside BOF Length	0.804	12.76	1.05	0.572	14.77	0.89
28 5th Toe Length	0.804	8.68	0.96	0.560	12.34	0.84
29 BOF Length,Left	–	–	–	–	–	–
30 Foot Length,Left	–	–	–	–	–	–
31 BOF Breadth,Hoz,Left	–	–	–	–	–	–
32 Bimalleolar Breadth	2.276	9.52	0.96	2.015	10.17	0.78
33 1st-3rd Toe Breadth	1.050	18.60	1.21	0.955	17.15	0.97

*Not significant at p=0.05

269

Table 102. Simple Regression Equations for Estimating BOF Circumference, Right (VAR 16)

Predictor Variable	Male Slope	Male Const.	Male SEE	Female Slope	Female Const.	Female SEE
1 Stature	0.102	7.25	1.04	0.085	8.87	0.92
2 Calf Height	0.219	17.68	1.16	0.173	17.18	0.99
3 Ankle Height	0.461	19.32	1.19	0.519	17.05	0.97
4 Med Malleolus Height	0.575	20.51	1.21	0.473	19.26	1.02
5 Lat Malleolus Height	0.392	22.34	1.24	0.354	20.32	1.04
6 Dorsal Arch Height	0.775	18.30	1.17	0.709	16.95	0.98
7 Plantar Arch Height	0.261	24.39	1.26	NS[*]	–	–
8 Ball of Foot Height	2.620	14.93	1.03	1.984	15.54	0.96
9 1st Toe Height	2.177	20.39	1.18	2.024	18.73	0.99
10 Maximum Toe Height	2.233	19.49	1.13	1.900	18.28	0.98
11 Outside BOF Height	2.363	18.25	1.08	2.002	17.26	0.97
12 Calf Circumference	0.291	14.42	1.01	0.238	14.29	0.96
13 Ankle Circumference	0.613	11.47	0.93	0.529	11.64	0.90
14 Heel-Ankle Circum	0.581	5.28	0.78	0.571	5.01	0.71
15 Instep Circumference	0.818	3.80	0.66	0.840	3.09	0.61
16 BOF Circum Right	–	–	–	–	–	–
17 Heel Breadth,Right	1.489	14.73	1.08	1.354	14.08	0.91
18 BOF Breadth,Diagonal	2.128	2.76	0.43	2.098	2.72	0.36
19 Heel Breadth,Left	–	–	–	–	–	–
20 BOF Circum,Left	0.913	2.27	0.44	0.929	1.72	0.37
21 Weight	0.072	19.72	0.96	0.098	16.74	0.85
22 Ankle Length	1.121	13.03	0.98	0.990	13.10	0.88
23 Instep Length	0.885	15.46	1.08	0.748	15.01	0.93
24 BOF Length,Right	0.764	10.16	0.97	0.539	13.10	0.90
25 Foot Length,Right	0.628	8.26	0.93	0.515	10.09	0.84
26 BOF Breadth,Hoz,Right	1.923	5.78	0.72	1.961	4.74	0.59
27 Outside BOF Length	0.620	14.85	1.10	0.426	16.30	0.99
28 5th Toe Length	0.667	10.70	1.02	0.480	13.27	0.93
29 BOF Length,Left	–	–	–	–	–	–
30 Foot Length,Left	–	–	–	–	–	–
31 BOF Breadth,Hoz,Left	–	–	–	–	–	–
32 Bimalleolar Breadth	2.086	9.93	0.95	1.802	10.92	0.87
33 1st-3rd Toe Breadth	1.182	16.68	1.10	1.094	15.62	0.96

[*]Not significant at p=0.05

Table 103. Simple Regression Equations for Estimating Heel Breadth, Right (VAR 17)

		Male			Female		
Predictor Variable		Slope	Const.	SEE	Slope	Const.	SEE
1	Stature	0.023	3.00	0.41	0.021	2.94	0.40
2	Calf Height	0.086	4.07	0.40	0.086	3.60	0.37
3	Ankle Height	0.086	5.93	0.44	0.138	4.84	0.41
4	Med Malleolus Height	NS*			NS		
5	Lat Malleolus Height	NS			NS		
6	Dorsal Arch Height	0.132	5.84	0.44	0.106	5.48	0.42
7	Plantar Arch Height	NS			-0.093	6.60	0.42
8	Ball of Foot Height	0.451	5.25	0.43	0.389	4.94	0.41
9	1st Toe Height	0.527	5.86	0.43	0.903	4.58	0.38
10	Maximum Toe Height	0.873	4.80	0.38	0.922	4.21	0.37
11	Outside BOF Height	0.768	4.77	0.39	0.836	4.08	0.38
12	Calf Circumference	0.078	4.12	0.39	0.062	4.15	0.40
13	Ankle Circumference	0.150	3.67	0.39	0.092	4.42	0.41
14	Heel-Ankle Circum	0.168	1.24	0.34	0.204	0.04	0.31
15	Instep Circumference	0.218	1.31	0.34	0.263	0.21	0.32
16	BOF Circum,Right	0.183	2.41	0.38	0.212	1.53	0.36
17	Heel Breadth,Right	-	-	-	-	-	-
18	BOF Breadth,Diagonal	0.428	2.51	0.38	0.487	1.70	0.35
19	Heel Breadth,Left	0.928	0.55	0.18	0.937	0.45	0.16
20	BOF Circum,Left	-	-	-	-	-	-
21	Weight	0.022	5.31	0.36	0.030	4.56	0.38
22	Ankle Length	0.347	3.25	0.37	0.365	2.81	0.36
23	Instep Length	0.337	3.19	0.36	0.322	3.04	0.36
24	BOF Length,Right	0.226	2.58	0.37	0.192	2.93	0.37
25	Foot Length,Right	0.172	2.38	0.38	0.180	1.93	0.35
26	BOF Breadth,Hoz,Right	0.390	3.09	0.39	0.465	2.08	0.37
27	Outside BOF Length	0.212	3.49	0.39	0.194	3.44	0.38
28	5th Toe Length	0.206	2.56	0.38	0.188	2.66	0.37
29	BOF Length,Left	-	-	-	-	-	-
30	Foot Length,Left	-	-	-	-	-	-
31	BOF Breadth,Hoz,Left	-	-	-	-	-	-
32	Bimalleolar Breadth	0.533	3.12	0.39	0.485	3.17	0.39
33	1st-3rd Toe Breadth	0.198	5.60	0.43	0.228	4.86	0.41

*Not significant at p=0.05

271

Table 104. Simple Regression Equations for Estimating BOF Breadth, Diagonal (VAR 18)

		Male			Female		
Predictor Variable		Slope	Const.	SEE	Slope	Const.	SEE
1	Stature	0.039	3.65	0.49	0.035	3.81	0.42
2	Calf Height	0.090	7.45	0.52	0.075	7.12	0.44
3	Ankle Height	0.182	8.23	0.53	0.229	7.03	0.44
4	Med Malleolus Height	0.160	9.24	0.55	0.134	8.54	0.47
5	Lat Malleolus Height	NS*			0.088	8.93	0.48
6	Dorsal Arch Height	0.256	8.26	0.54	0.239	7.58	0.46
7	Plantar Arch Height	NS			NS		
8	Ball of Foot Height	0.810	7.37	0.51	0.533	7.59	0.46
9	1st Toe Height	0.826	8.72	0.53	0.828	7.90	0.45
10	Maximum Toe Height	0.946	8.13	0.50	0.810	7.64	0.44
11	Outside BOF Height	0.909	7.87	0.50	0.713	7.58	0.45
12	Calf Circumference	0.116	6.26	0.47	0.090	6.35	0.44
13	Ankle Circumference	0.231	5.36	0.46	0.195	5.44	0.43
14	Heel-Ankle Circum	0.226	2.80	0.40	0.242	2.03	0.34
15	Instep Circumference	0.335	1.77	0.34	0.353	1.28	0.30
16	BOF Circum,Right	0.416	0.06	0.19	0.422	-0.06	0.16
17	Heel Breadth,Right	0.680	5.76	0.47	0.627	5.53	0.40
18	BOF Breadth,Diagonal	–	–	–	–	–	–
19	Heel Breadth,Left	–	–	–	–	–	–
20	BOF Circum,Left	–	–	–	–	–	–
21	Weight	0.028	8.40	0.46	0.039	7.14	0.40
22	Ankle Length	0.492	5.21	0.44	0.458	5.08	0.39
23	Instep Length	0.387	6.14	0.47	0.347	5.96	0.41
24	BOF Length,Right	0.349	3.68	0.42	0.261	4.87	0.39
25	Foot Length,Right	0.270	3.25	0.42	0.236	3.76	0.37
26	BOF Breadth,Hoz,Right	0.867	1.78	0.30	0.898	1.30	0.25
27	Outside BOF Length	0.267	6.08	0.49	0.205	6.45	0.44
28	5th Toe Length	0.294	4.15	0.45	0.218	5.24	0.41
29	BOF Length,Left	–	–	–	–	–	–
30	Foot Length,Left	–	–	–	–	–	–
31	BOF Breadth,Hoz,Left	–	–	–	–	–	–
32	Bimalleolar Breadth	0.865	4.22	0.44	0.751	4.61	0.40
33	1st-3rd Toe Breadth	0.442	7.35	0.51	0.454	6.58	0.44

*Not Significant at p=0.05

Table 105. Simple Regression Equations for Estimating Heel Breadth, Left
(VAR 19)

		Male			Female		
	Predictor Variable	Slope	Const.	SEE	Slope	Const.	SEE
1	Stature	0.025	2.58	0.40	0.022	2.76	0.39
2	Calf Height	-	-	-	-	-	-
3	Ankle Height	-	-	-	-	-	-
4	Med Malleolus Height	-	-	-	-	-	-
5	Lat Malleolus Height	-	-	-	-	-	-
6	Dorsal Arch Height	-	-	-	-	-	-
7	Plantar Arch Height	-	-	-	-	-	-
8	Ball of Foot Height	-	-	-	-	-	-
9	1st Toe Height	-	-	-	-	-	-
10	Maximum Toe Height	-	-	-	-	-	-
11	Outside BOF Height	-	-	-	-	-	-
12	Calf Circumference	-	-	-	-	-	-
13	Ankle Circumference	-	-	-	-	-	-
14	Heel-Ankle Circum	-	-	-	-	-	-
15	Instep Circumference	-	-	-	-	-	-
16	BOF Circum,Right	-	-	-	-	-	-
17	Heel Breadth,Right	0.905	0.62	0.18	0.917	0.46	0.16
18	BOF Breadth,Diagonal	-	-	-	-	-	-
19	Heel Breadth,Left	-	-	-	-	-	-
20	BOF Circum,Left	0.189	2.23	0.36	0.216	1.40	0.35
21	Weight	0.024	5.17	0.34	0.030	4.44	0.37
22	Ankle Length	-	-	-	-	-	-
23	Instep Length	-	-	-	-	-	-
24	BOF Length,Right	-	-	-	-	-	-
25	Foot Length,Right	-	-	-	-	-	-
26	BOF Breadth,Hoz,Right	-	-	-	-	-	-
27	Outside BOF Length	-	-	-	-	-	-
28	5th Toe Length	-	-	-	-	-	-
29	BOF Length,Left	0.219	2.69	0.36	0.191	2.90	0.37
30	Foot Length,Left	0.194	1.77	0.36	0.178	1.93	0.35
31	BOF Breadth,Hoz,Left	0.383	3.11	0.39	0.450	2.17	0.36
32	Bimalleolar Breadth	-	-	-	-	-	-
33	1st-3rd Toe Breadth	-	-	-	-	-	-

Table 106. Simple Regression Equations for Estimating BOF Circumference, Left
          (VAR 20)

	Predictor Variable	Male Slope	Male Const.	Male SEE	Female Slope	Female Const.	Female SEE
1	Stature	0.102	7.12	1.08	0.084	8.91	0.93
2	Calf Height	–	–	–	–	–	–
3	Ankle Height	–	–	–	–	–	–
4	Med Malleolus Height	–	–	–	–	–	–
5	Lat Malleolus Height	–	–	–	–	–	–
6	Dorsal Arch Height	–	–	–	–	–	–
7	Plantar Arch Height	–	–	–	–	–	–
8	Ball of Foot Height	–	–	–	–	–	–
9	1st Toe Height	–	–	–	–	–	–
10	Maximum Toe Height	–	–	–	–	–	–
11	Outside BOF Height	–	–	–	–	–	–
12	Calf Circumference	–	–	–	–	–	–
13	Ankle Circumference	–	–	–	–	–	–
14	Heel-Ankle Circum	–	–	–	–	–	–
15	Instep Circumference	–	–	–	–	–	–
16	BOF Circum,Right	0.965	0.80	0.45	0.948	1.06	0.37
17	Heel Breadth,Diagonal	–	–	–	–	–	–
18	BOF Breadth,Diagonal	–	–	–	–	–	–
19	Heel Breadth,Left	1.667	13.47	1.08	1.440	13.50	0.90
20	BOF Circum,Left	–	–	–	–	–	–
21	Weight	0.076	19.37	0.97	0.098	16.61	0.86
22	Ankle Length	–	–	–	–	–	–
23	Instep Length	–	–	–	–	–	–
24	BOF Length,Right	–	–	–	–	–	–
25	Foot Length,Right	–	–	–	–	–	–
26	BOF Breadth,Hoz,Right	–	–	–	–	–	–
27	Outside BOF Length	–	–	–	–	–	–
28	5th Toe Lenth	–	–	–	–	–	–
29	BOF Length,Left	0.752	10.41	1.00	0.551	12.82	0.91
30	Foot Length,Left	0.673	6.99	0.96	0.511	10.10	0.86
31	BOF Breadth,Hoz,Left	2.004	4.89	0.69	1.807	6.08	0.63
32	Bimalleolar Breadth	–	–	–	–	–	–
33	1st-3rd Toe Breadth	–	–	–	–	–	–

Table 107. Simple Regression Equations for Estimating Weight (VAR 21)

		Male			Female		
Predictor Variable		Slope	Const.	SEE	Slope	Const.	SEE
1	Stature	0.910	-84.26	9.49	0.610	-38.51	5.33
2	Calf Height	2.230	-7.00	10.28	1.408	15.61	5.75
3	Ankle Height	2.958	38.15	11.14	2.568	32.49	6.28
4	Med Malleolus Height	6.206	25.34	10.77	3.017	38.62	6.36
5	Lat Malleolus Height	3.567	49.81	11.21	2.607	43.09	6.43
6	Dorsal Arch Height	6.668	16.53	10.66	4.080	27.42	6.20
7	Plantar Arch Height	3.603	64.78	11.30	1.740	55.24	6.60
8	Ball of Foot Height	18.450	3.54	10.24	11.219	20.04	6.13
9	1st Toe Height	13.794	45.36	11.14	7.367	45.96	6.51
10	Maximum Toe Height	21.692	20.48	10.02	9.654	38.04	6.32
11	Outside BOF Height	24.737	3.18	9.15	9.089	35.75	6.34
12	Calf Circumference	3.390	-49.58	7.14	2.302	-20.71	4.74
13	Ankle Circumference	5.711	-52.07	8.23	3.625	-15.22	5.31
14	Heel-Ankle Circum	4.745	-86.92	8.07	3.108	-35.77	5.02
15	Instep Circumference	6.560	-95.87	7.49	4.214	-37.94	4.98
16	BOF Circum,Right	5.915	-73.24	8.71	3.801	-25.85	5.29
17	Heel Breadth,Right	15.052	-29.94	9.35	7.296	14.06	5.92
18	BOF Breadth,Diagonal	11.807	-48.68	9.40	7.546	-11.45	5.60
19	Heel Breadth,Left	16.276	-37.85	9.00	7.676	12.11	5.85
20	BOF Circum,Left	5.871	-71.67	8.58	3.729	-23.79	5.31
21	Weight	-	-	-	-	-	-
22	Ankle Length	9.003	-21.91	9.52	5.082	11.21	5.87
23	Instep Length	6.463	2.23	10.33	3.924	20.13	6.05
24	BOF Length,Right	5.956	-41.41	9.55	2.848	9.72	5.90
25	Foot Length,Right	4.626	-49.02	9.60	2.750	-6.78	5.64
26	BOF Breadth,Hoz,Right	11.179	-37.07	9.76	6.877	-2.58	5.90
27	Outside BOF Length	5.696	-19.16	9.95	3.101	13.99	5.94
28	5th Toe Length	5.520	-44.16	9.64	3.009	1.39	5.76
29	BOF Length,Left	5.768	-37.04	9.51	2.865	9.74	5.93
30	Foot Length,Left	4.977	-58.19	9.46	2.784	-7.54	5.64
31	BOF Breadth,Hoz,Left	11.361	-38.87	9.64	6.501	1.06	5.88
32	Bimalleolar Breadth	15.236	-35.65	9.72	10.359	-7.24	5.60
33	1st-3rd Toe Breadth	7.794	19.65	10.73	4.100	33.88	6.44

Table 108. Simple Regression Equations for Estimating Ankle Length (VAR 22)

Predictor Variable	Male			Female		
	Slope	Const.	SEE	Slope	Const.	SEE
1 Stature	0.050	2.03	0.62	0.046	2.20	0.55
2 Calf Height	0.153	5.59	0.62	0.126	5.66	0.54
3 Ankle Height	0.268	7.43	0.67	0.255	6.90	0.58
4 Med Malleolus Height	NS*			NS		
5 Lat Malleolus Height	NS			NS		
6 Dorsal Arch Height	NS			NS		
7 Plantar Arch Height	NS			-0.123	10.01	0.62
8 Ball of Foot Height	0.858	7.49	0.68	0.475	7.95	0.61
9 1st Toe Height	0.836	9.00	0.70	1.162	7.40	0.58
10 Maximum Toe Height	1.330	7.46	0.63	1.123	7.07	0.57
11 Outside BOF Height	1.173	7.40	0.64	0.957	7.07	0.58
12 Calf Cicumference	0.124	6.27	0.64	0.096	6.27	0.59
13 Ankle Circumference	0.296	4.22	0.59	0.233	4.80	0.57
14 Heel-Ankle Circum	0.305	4.04	0.49	0.335	-0.70	0.41
15 Instep Circumference	0.369	1.19	0.52	0.377	0.86	0.48
16 BOF Circum,Right	0.359	1.81	0.56	0.335	2.06	0.51
17 Heel Breadth,Right	0.904	4.50	0.60	0.790	4.65	0.53
18 BOF Breadth,Diagonal	0.085	2.36	0.56	0.771	2.32	0.50
19 Heel Breadth,Left	–	–	–	–	–	–
20 BOF Circum,Left	–	–	–	–	–	–
21 Weight	0.035	8.18	0.59	0.044	6.97	0.55
22 Ankle Length	–	–	–	–	–	–
23 Instep Length	0.703	2.84	0.46	0.658	2.92	0.40
24 BOF Length,Right	0.523	0.55	0.45	0.429	2.03	0.41
25 Foot Length,Right	0.390	0.31	0.48	0.367	0.70	0.40
26 BOF Breadth,Hoz,Right	0.706	3.72	0.61	0.616	4.02	0.56
27 Outside BOF Length	0.469	3.03	0.54	0.402	3.66	0.48
28 5th Toe Length	0.441	1.26	0.51	0.355	2.71	0.48
29 BOF Length,Left	–	–	–	–	–	–
30 Foot Length,Left	–	–	–	–	–	–
31 BOF Breadth,Hoz,Left	–	–	–	–	–	–
32 Bimalleolar Breadth	1.009	3.47	0.59	0.987	3.22	0.52
33 1st-3rd Toe Breadth	0.375	8.14	0.69	0.356	7.36	0.60

*Not significant at p=0.05

276

Table 109. Simple Regression Equations for Estimating Instep Length (VAR 23)

Predicted Variable	Male			Female		
	Slope	Const.	SEE	Slope	Const.	SEE
1 Stature	0.050	2.56	0.70	0.059	0.68	0.61
2 Calf Height	0.171	5.50	0.68	0.169	4.88	0.60
3 Ankle Height	0.256	8.12	0.74	0.336	6.59	0.66
4 Med Malleolus Height	NS*			NS		
5 Lat Malleolus Height	NS			NS		
6 Dorsal Arch Height	0.140	10.12	0.78	0.215	8.50	0.71
7 Plantar Arch Height	-0.202	11.98	0.78	-0.133	10.61	0.72
8 Ball of Foot Height	0.640	8.86	0.76	0.437	8.66	0.71
9 1st Toe Height	0.773	9.67	0.77	1.265	7.77	0.68
10 Maximum Toe Height	1.276	8.12	0.71	1.163	7.55	0.67
11 Outside BOF Height	1.069	8.23	0.72	1.010	7.50	0.68
12 Calf Circumference	0.096	7.84	0.74	0.075	7.58	0.70
13 Ankle Circumference	0.248	5.83	0.70	0.201	6.05	0.69
14 Heel-Ankle Circum	0.285	1.61	0.61	0.370	-1.20	0.50
15 Instep Circumference	0.320	3.00	0.66	0.346	2.17	0.62
16 BOF Circum,Right	0.326	3.17	0.67	0.338	2.56	0.62
17 Heel Breadth,Right	1.042	4.05	0.63	0.932	4.32	0.60
18 BOF Breadth,Diagonal	0.754	3.43	0.66	0.780	2.82	0.62
19 Heel Breadth,Left	-	-	-	-	-	-
20 BOF Circum,Left	-	-	-	-	-	-
21 Weight	0.030	9.10	0.70	0.046	7.46	0.65
22 Ankle Length	0.837	2.29	0.50	0.879	1.74	0.47
23 Instep Length	-	-	-	-	-	-
24 BOF Length,Right	0.564	0.28	0.50	0.524	0.92	0.43
25 Foot Length,Right	0.415	0.18	0.54	0.446	-0.64	0.43
26 BOF Breadth,Hoz,Right	0.626	5.05	0.71	0.579	4.93	0.67
27 Outside BOF Length	0.486	3.27	0.61	0.501	2.75	0.53
28 5th Toe Length	0.454	1.50	0.59	0.445	1.51	0.52
29 BOF Length,Left	-	-	-	-	-	-
30 Foot Length,Left	-	-	-	-	-	-
31 BOF Breadth,Hoz,Left	-	-	-	-	-	-
32 Bimalleolar Breadth	1.000	4.06	0.67	1.034	3.49	0.62
33 1st-3rd Toe Breadth	0.284	9.33	0.77	0.276	8.45	0.71

*Not significant at p=0.05

277

Table 110. Simple Regression Equations for Estimating BOF Length, Right (VAR 24)

	Predicted Variable	Male			Female		
		Slope	Const.	SEE	Slope	Const.	SEE
1	Stature	0.099	2.21	0.81	0.108	0.33	0.84
2	Calf Height	0.285	9.89	0.85	0.281	8.28	0.86
3	Ankle Height	0.530	12.94	0.95	0.646	10.76	0.94
4	Med Malleolus Height	0.322	17.05	1.06	0.182	16.44	1.09
5	Lat Malleolus Height	NS*			NS		
6	Dorsal Arch Height	0.421	15.93	1.04	0.394	14.58	1.07
7	Plantar Arch Height	NS			-0.266	18.52	1.09
8	Ball of Foot Height	0.939	15.99	1.04	NS		
9	1st Toe Height	1.334	16.73	1.04	1.901	14.06	1.03
10	Maximum Toe Height	1.741	15.23	0.98	1.959	13.24	1.01
11	Outside BOF Height	1.666	14.78	0.97	1.505	13.69	1.04
12	Calf Circumference	0.162	13.69	0.99	0.106	14.02	1.08
13	Ankle Circumference	0.381	11.14	0.94	0.281	11.90	1.05
14	Heel-Ankle Circum	0.454	4.12	0.74	0.577	-0.09	0.74
15	Instep Circumference	0.562	4.95	0.78	0.627	3.15	0.88
16	BOF Circum,Right	0.549	5.83	0.82	0.566	4.93	0.92
17	Heel Breadth,Right	1.321	10.39	0.90	1.285	9.61	0.95
18	BOF Breadth,Diagonal	1.284	6.14	0.80	1.363	4.80	0.88
19	Heel Breadth,Left	-	-	-	-	-	-
20	BOF Circum,Left	-	-	-	-	-	-
21	Weight	0.052	15.71	0.89	0.077	13.09	0.97
22	Ankle Length	1.176	6.92	0.67	1.331	4.90	0.72
23	Instep Length	1.064	7.56	0.68	1.216	5.31	0.66
24	BOF Length,Right	-	-	-	-	-	-
25	Foot Length,Right	0.709	0.55	0.46	0.769	-1.00	0.46
26	BOF Breadth,Hoz,Right	1.048	9.09	0.91	1.025	8.38	1.00
27	Outside BOF Length	0.844	5.61	0.66	0.908	4.21	0.64
28	5th Toe Length	0.795	2.40	0.58	0.771	2.66	0.68
29	BOF Length,Left	0.865	2.75	0.47	0.865	2.49	0.59
30	Foot Length,Left	-	-	-	-	-	-
31	BOF Breadth,Hoz,Left	-	-	-	-	-	-
32	Bimalleolar Breadth	1.684	7.36	0.84	1.582	7.44	0.95
33	1st-3rd Toe Breadth	0.461	16.35	1.05	0.403	15.15	1.09

*Not significant at p=0.05

Table 111. Simple Regression Equations for Estimating Foot Length, Right (VAR 25)

Predicted Variable	Male			Female		
	Slope	Const.	SEE	Slope	Const.	SEE
1 Stature	0.132	3.74	1.00	0.144	1.02	0.89
2 Calf Height	0.373	14.16	1.06	0.365	12.80	0.96
3 Ankle Height	0.678	18.36	1.20	0.832	15.38	1.08
4 Med Malleolus Height	0.539	22.59	1.33	0.409	21.45	1.27
5 Lat Malleolus Height	0.284	24.90	1.36	0.256	22.69	1.29
6 Dorsal Arch Height	0.790	19.95	1.27	0.719	18.59	1.22
7 Plantar Arch Height	NS*			NS		
8 Ball of Foot Height	2.028	19.03	1.24	1.392	19.39	1.26
9 1st Toe Height	1.764	23.08	1.32	2.311	19.90	1.21
10 Maximum Toe Height	2.143	21.51	1.25	2.267	19.16	1.20
11 Outside BOF Height	1.999	21.10	1.25	1.829	19.45	1.23
12 Calf Circumference	0.209	19.23	1.25	0.152	19.04	1.26
13 Ankle Circumference	0.505	15.66	1.17	0.407	15.91	1.22
14 Heel-Ankle Circum	0.601	6.37	0.90	0.756	1.03	0.74
15 Instep Circumference	0.739	7.64	0.96	0.819	5.30	0.97
16 BOF Circum,Right	0.732	8.52	1.01	0.756	7.25	1.02
17 Heel Breadth,Right	1.631	15.51	1.16	1.693	13.66	1.08
18 BOF Breadth,Diagonal	1.614	9.95	1.03	1.718	8.05	1.00
19 Heel Breadth,Left	-	-	-	-	-	-
20 BOF Circum,Left	-	-	-	-	-	-
21 Weight	0.066	21.98	1.14	0.104	18.10	1.10
22 Ankle Length	1.423	11.53	0.92	1.590	9.04	0.84
23 Instep Length	1.271	12.52	0.94	1.445	9.61	0.78
24 BOF Length,Right	1.150	4.35	0.59	1.075	5.30	0.54
25 Foot Length,Right	-	-	-	-	-	-
26 BOF Breadth,Hoz,Right	1.441	12.42	1.13	1.451	11.12	1.12
27 Outside BOF Length	1.099	8.66	0.80	1.119	7.69	0.70
28 5th Toe Length	1.041	4.35	0.69	0.998	4.86	0.66
29 BOF Length,Left	-	-	-	-	-	-
30 Foot Length,Left	0.988	0.38	0.44	0.983	0.43	0.31
31 BOF Breadth,Hoz,Left	-	-	-	-	-	-
32 Bimalleolar Breadth	2.158	11.19	1.06	2.044	11.06	1.08
33 1st-3rd Toe Breadth	0.693	21.98	1.32	0.742	19.60	1.26

*Not significant at p=0.05

Table 112. Simple Regression Equations for Estimating BOF Breadth, Horizontal, Right (VAR 26)

Predicted Variable	Male			Female		
	Slope	Const.	SEE	Slope	Const.	SEE
1 Stature	0.035	3.92	0.48	0.029	4.41	0.41
2 Calf Height	0.081	7.32	0.51	0.062	7.17	0.43
3 Ankle Height	0.154	8.13	0.52	0.186	7.13	0.42
4 Med Malleolus Height	0.146	8.90	0.54	0.143	8.11	0.44
5 Lat Malleolus Height	NS*			0.109	8.42	0.45
6 Dorsal Arch Height	0.238	7.98	0.52	0.222	7.35	0.44
7 Plantar Arch Height	NS			NS		
8 Ball of Foot Height	0.787	7.01	0.50	0.568	7.10	0.44
9 1st Toe Height	0.700	8.55	0.52	0.748	7.69	0.43
10 Maximum Toe Height	0.856	7.91	0.50	0.690	7.55	0.43
11 Outside BOF Height	0.757	7.87	0.50	0.631	7.44	0.43
12 Calf Circumference	0.102	6.30	0.47	0.078	6.39	0.43
13 Ankle Circumference	0.199	5.63	0.47	0.168	5.64	0.42
14 Heel-Ankle Circum	0.199	3.25	0.42	0.195	3.12	0.36
15 Instep Circumference	0.296	2.34	0.38	0.303	2.08	0.32
16 BOF Circum,Right	0.353	1.19	0.31	0.354	1.12	0.25
17 Heel Breadth,Right	0.582	6.00	0.48	0.537	5.74	0.39
18 BOF Breadth,Diagonal	0.816	1.49	0.29	0.805	1.49	0.24
19 Heel Breadth,Left	–	–	–	–	–	–
20 BOF Circum,Left	–	–	–	–	–	–
21 Weight	0.025	8.19	0.46	0.032	7.21	0.40
22 Ankle Length	0.405	5.70	0.46	0.328	5.97	0.41
23 Instep Length	0.302	6.66	0.49	0.231	6.78	0.42
24 BOF Length,Right	0.268	4.82	0.46	0.176	6.01	0.41
25 Foot Length,Right	0.227	3.97	0.45	0.178	4.79	0.39
26 BOF Breadth,Hoz,Right	–	–	–	–	–	–
27 Outside BOF Length	0.272	5.56	0.47	0.170	6.61	0.42
28 5th Toe Length	0.281	3.99	0.44	0.178	5.66	0.41
29 BOF Length,Left	–	–	–	–	–	–
30 Foot Length,Left	–	–	–	–	–	–
31 BOF Breadth,Hoz,Left	0.818	1.84	0.30	0.776	2.07	0.26
32 Bimalleolar Breadth	0.756	4.56	0.45	0.619	5.10	0.40
33 1st-3rd Toe Breadth	0.420	7.07	0.50	0.434	6.35	0.42

*Not significant at p=0.05

Table 113. Simple Regression Equations for Estimating Outside BOF Length (VAR 27)

		Male			Female		
	Predicted Variable	Slope	Const.	SEE	Slope	Const.	SEE
1	Stature	0.093	0.29	0.76	0.100	-1.19	0.73
2	Calf Height	0.272	7.32	0.79	0.262	6.61	0.75
3	Ankle Height	0.488	10.46	0.90	0.586	8.58	0.84
4	Med Malleolus Height	0.441	13.08	0.97	0.305	12.74	0.96
5	Lat Malleolus Height	0.272	14.68	0.99	0.218	13.48	0.97
6	Dorsal Arch Height	0.513	12.10	0.96	0.501	10.89	0.93
7	Plantar Arch Height	NS*			NS		
8	Ball of Foot Height	1.082	12.42	0.97	0.747	12.24	0.96
9	1st Toe Height	0.912	14.65	1.00	1.255	12.48	0.95
10	Maximum Toe Height	1.609	12.56	0.92	1.609	11.21	0.91
11	Outside BOF Height	1.246	13.00	0.95	0.815	12.72	0.96
12	Calf Circumference	0.119	12.25	0.96	0.090	11.76	0.96
13	Ankle Circumference	0.312	9.68	0.91	0.240	9.93	0.94
14	Heel-Ankle Circum	0.390	3.27	0.76	0.483	-0.01	0.70
15	Instep Circumference	0.466	4.45	0.80	0.496	3.37	0.83
16	BOF Circum,Right	0.395	6.71	0.88	0.357	6.84	0.90
17	Heel Breadth,Right	1.096	8.96	0.89	1.038	8.34	0.88
18	BOF Breadth,Diagonal	0.871	7.48	0.89	0.852	6.83	0.89
19	Heel Breadth,Left	-	-	-	-	-	-
20	BOF Circum,Left	-	-	-	-	-	-
21	Weight	0.044	13.30	0.88	0.067	10.88	0.87
22	Ankle Length	0.932	6.54	0.76	0.992	5.34	0.76
23	Instep Length	0.812	7.42	0.79	0.926	5.45	0.72
24	BOF Length,Right	0.747	1.96	0.62	0.723	2.08	0.58
25	Foot Length,Right	0.599	0.49	0.59	0.638	-0.63	0.52
26	BOF Breadth,Hoz,Right	0.941	7.16	0.87	0.786	7.74	0.91
27	Outside BOF Length	-	-	-	-	-	-
28	5th Toe Length	0.820	-1.16	0.39	0.787	-0.48	0.43
29	BOF Length,Left	-	-	-	-	-	-
30	Foot Length,Left	-	-	-	-	-	-
31	BOF Breadth,Hoz,Left	-	-	-	-	-	-
32	Bimalleolar Breadth	1.357	6.74	0.85	1.265	6.68	0.88
33	1st-3rd Toe Breadth	0.337	14.23	1.00	NS		

*Not significant at p=0.05

281

Table 114. Simple Regression Equations for Estimating 5th Toe Length (VAR 28)

Predicted Variable	Male			Female		
	Slope	Const.	SEE	Slope	Const.	SEE
1 Stature	0.111	2.22	0.82	0.119	0.29	0.80
2 Calf Height	0.317	10.85	0.87	0.303	9.95	0.85
3 Ankle Height	0.057	14.64	1.00	0.694	12.06	0.94
4 Med Malleolus Height	0.539	17.34	1.08	0.419	16.56	1.09
5 Lat Malleolus Height	0.333	19.30	1.11	0.295	17.62	1.10
6 Dorsal Arch Height	0.652	15.93	1.06	0.661	14.25	1.05
7 Plantar Arch Height	NS*			NS		
8 Ball of Foot Height	1.456	16.02	1.06	1.183	15.33	1.09
9 1st Toe Height	1.179	19.12	1.11	1.675	16.32	1.07
10 Maximum Toe Height	1.925	16.82	1.02	1.956	15.06	1.03
11 Outside BOF Height	1.502	17.31	1.06	1.310	16.03	1.08
12 Calf Circumference	0.156	15.96	1.06	0.132	14.94	1.09
13 Ankle Circumference	0.394	12.91	1.00	0.332	12.65	1.06
14 Heel-Ankle Circum	0.483	5.16	0.77	0.590	1.35	0.75
15 Instep Circumference	0.589	6.31	0.83	0.636	4.75	0.90
16 BOF Circum,Right	0.536	8.22	0.91	0.525	7.67	0.97
17 Heel Breadth,Right	1.342	12.30	0.97	1.312	11.25	0.98
18 BOF Breadth,Diagonal	1.209	8.98	0.91	1.186	8.29	0.97
19 Heel Breadth,Left	–	–	–	–	–	–
20 BOF Circum,Left	–	–	–	–	–	–
21 Weight	0.054	17.62	0.95	0.085	14.44	0.97
22 Ankle Length	1.107	9.71	0.82	1.146	8.50	0.86
23 Instep Length	0.958	10.82	0.86	1.077	8.55	0.81
24 BOF Length,Right	0.888	4.25	0.62	0.804	5.30	0.69
25 Foot Length,Right	0.717	2.38	0.57	0.745	1.41	0.57
26 BOF Breadth,Hoz,Right	1.228	9.33	0.92	1.080	9.70	1.01
27 Outside BOF Length	1.036	4.47	0.44	1.030	4.19	0.49
28 5th Toe Length	–	–	–	–	–	–
29 BOF Length,Left	–	–	–	–	–	–
30 Foot Length,Left	–	–	–	–	–	–
31 BOF Breadth,Hoz,Left	–	–	–	–	–	–
32 Bimalleolar Breadth	1.655	9.62	0.92	1.537	9.55	0.98
33 1st-3rd Toe Breadth	0.454	18.45	1.11	0.358	17.26	1.11

*Not significant at p=0.05

Table 115. Simple Regression Equations for Estimating BOF Length, Left
            (VAR 29)

	Predicted Variable	Male			Female		
		Slope	Const.	SEE	Slope	Const.	SEE
1	Stature	0.103	1.44	0.85	0.103	1.03	0.83
2	Calf Height	--	--	--	--	--	--
3	Ankle Height	--	--	--	--	--	--
4	Med Malleolus Height	--	--	--	--	--	--
5	Lat Malleolus Height	--	--	--	--	--	--
6	Dorsal Arch Height	--	--	--	--	--	--
7	Plantar Arch Height	--	--	--	--	--	--
8	Ball of Foot Height	--	--	--	--	--	--
9	1st Toe Height	--	--	--	--	--	--
10	Maximum Toe Height	--	--	--	--	--	--
11	Outside BOF Height	--	--	--	--	--	--
12	Calf Circumference	--	--	--	--	--	--
13	Ankle Circumference	--	--	--	--	--	--
14	Heel-Ankle Circum	--	--	--	--	--	--
15	Instep Circumference	--	--	--	--	--	--
16	BOF Circum,Right	--	--	--	--	--	--
17	Heel Breadth,Right	--	--	--	--	--	--
18	BOF Breadth,Diagonal	--	--	--	--	--	--
19	Heel Breadth,Left	1.425	9.60	0.93	1.242	9.85	0.94
20	BOF Circum,Left	0.554	5.63	0.86	0.537	5.53	0.90
21	Weight 0.055	15.39	0.93	0.074	13.20	0.95	
22	Ankle Length	--	--	--	--	--	--
23	Instep Length	--	--	--	--	--	--
24	BOF Length,Right	0.938	1.09	0.49	0.820	3.09	0.58
25	Foot Length, Right	--	--	--	--	--	--
26	BOF Breadth,Hoz,Right	--	--	--	--	--	--
27	Outside BOF Length	--	--	--	--	--	--
28	5th Toe Length	--	--	--	--	--	--
29	BOF Length,Left	--	--	--	--	--	--
30	Foot Length,Left	0.791	-1.74	0.42	0.737	-0.32	0.50
31	BOF Breadth,Hoz,Left	1.046	9.00	0.96	0.995	8.58	0.96
32	Bimalleolar Breadth	--	--	--	--	--	--
33	1st-3rd Toe Breadth	--	--	--	--	--	--

Table 116. Simple Regression Equations for Estimating Foot Length, Left (VAR 30)

		Male			Female		
Predicted Variable		Slope	Const.	SEE	Slope	Const.	SEE
1	Stature	0.133	3.53	0.91	0.147	0.61	0.84
2	Calf Height	–	–	–	–	–	–
3	Ankle Height	–	–	–	–	–	–
4	Med Malleolus Height	–	–	–	–	–	–
5	Lat Malleolus Height	–	–	–	–	–	–
6	Dorsal Arch Height	–	–	–	–	–	–
7	Plantar Arch Height	–	–	–	–	–	–
8	Ball of Foot Height	–	–	–	–	–	–
9	1st Toe Height	–	–	–	–	–	–
10	Maximum Toe Height	–	–	–	–	–	–
11	Outside BOF Height	–	–	–	–	–	–
12	Calf Circumference	–	–	–	–	–	–
13	Ankle Circumference	–	–	–	–	–	–
14	Heel-Ankle Circum	–	–	–	–	–	–
15	Instep Circumfence	–	–	–	–	–	–
16	BOF Circum,Right	–	–	–	–	–	–
17	Heel Breadth,Right	–	–	–	–	–	–
18	BOF Breadth,Diagonal	–	–	–	–	–	–
19	Heel Breadth,Left	1.729	14.84	1.07	1.666	13.91	1.08
20	BOF Circum,Left	0.683	9.76	0.97	0.716	8.21	1.02
21	Weight	0.065	21.98	1.08	0.103	18.15	1.08
22	Ankle Length	–	–	–	–	–	–
23	Instep Length	–	–	–	–	–	–
24	BOF Length,Right	–	–	–	–	–	–
25	Foot Length,Right	0.908	2.41	0.42	0.959	0.97	0.30
26	BOF Breadth,Hoz,Right	–	–	–	–	–	–
27	Outside BOF Length	–	–	–	–	–	–
28	5th Toe Length	–	–	–	–	–	–
29	BOF Length,Left	1.008	5.64	0.49	1.060	5.65	0.60
30	Foot Length,Left	–	–	–	–	–	–
31	BOF Breadth,Hoz,Left	1.399	12.79	1.06	1.416	11.46	1.08
32	Bimalleolar Breadth	–	–	–	–	–	–
33	1st-3rd Toe Breadth	–	–	–	–	–	–

Table 117. Simple Regression Equations for Estimating BOF Breadth, Horizontal, Left (VAR 31)

Predicted Variable	Male Slope	Male Const.	Male SEE	Female Slope	Female Const.	Female SEE
1 Stature	0.037	3.59	0.48	0.032	3.86	0.44
2 Calf Height	-	-	-	-	-	-
3 Ankle Height	-	-	-	-	-	-
4 Med Malleolus Height	-	-	-	-	-	-
5 Lat Malleolus Height	-	-	-	-	-	-
6 Dorsal Arch Height	-	-	-	-	-	-
7 Plantar Arch Height	-	-	-	-	-	-
8 Ball of Foot Height	-	-	-	-	-	-
9 1st Toe Height	-	-	-	-	-	-
10 Maximum Toe Height	-	-	-	-	-	-
11 Outside BOF Height	-	-	-	-	-	-
12 Calf Circumference	-	-	-	-	-	-
13 Ankle Circumference	-	-	-	-	-	-
14 Heel-Ankle Circum	-	-	-	-	-	-
15 Instep Circumference	-	-	-	-	-	-
16 BOF Circum,Right	-	-	-	-	-	-
17 Heel Breadth, Right	-	-	-	-	-	-
18 BOF Breadth,Diagonal	-	-	-	-	-	-
19 Heel Breadth,Left	0.604	5.87	0.48	0.604	5.32	0.41
20 BOF Circum,Left	0.359	1.08	0.29	0.364	0.91	0.28
21 Weight	0.026	8.10	0.46	0.034	7.03	0.43
22 Ankle Length	-	-	-	-	-	-
23 Instep Length	-	-	-	-	-	-
24 BOF Length,Right	-	-	-	-	-	-
25 Foot Length,Right	-	-	-	-	-	-
26 BOF Breadth,Hoz,Right	0.843	1.58	0.31	0.882	1.04	0.27
27 Outside BOF Length	-	-	-	-	-	-
28 5th Toe Length	-	-	-	-	-	-
29 BOF Length,Left	0.254	5.12	0.47	0.205	5.49	0.43
30 Foot Length,Left	0.247	3.44	0.45	0.203	4.16	0.41
31 BOF Breadth,Hoz,Left	-	-	-	-	-	-
32 Bimalleolar Breadth	-	-	-	-	-	-
33 1st-3rd Toe Breadth	-	-	-	-	-	-

Table 118. Simple Regression Equations for Estimating Bimalleolar Breadth
            (VAR 32)

Predicted Variable	Male			Female		
	Slope	Const.	SEE	Slope	Const.	SEE
1 Stature	0.029	2.14	0.34	0.026	2.27	0.31
2 Calf Circumference	0.055	5.43	0.38	0.050	4.92	0.33
3 Ankle Height	0.150	5.40	0.38	0.146	4.94	0.33
4 Med Malleolus Height	0.126	6.28	0.40	0.117	5.68	0.34
5 Lat Malleolus Height	NS*			0.048	6.20	0.35
6 Dorsal Arch Height	0.200	5.53	0.38	0.156	5.26	0.34
7 Plantar Arch Height	NS			NS		
8 Ball of Foot Height	0.617	4.90	0.36	0.526	4.63	0.33
9 1st Toe Height	0.605	5.98	0.38	0.536	5.48	0.33
10 Maximum Toe Height	0.530	5.96	0.38	0.545	5.26	0.33
11 Outside BOF Height	0.636	5.44	0.36	0.525	5.10	0.33
12 Calf Circumference	0.080	4.34	0.34	0.084	3.57	0.31
13 Ankle Circumference	0.180	3.28	0.31	0.197	2.41	0.27
14 Heel-Ankle Circum	0.156	1.95	0.30	0.175	1.10	0.25
15 Instep Circumference	0.210	1.83	0.29	0.224	1.29	0.26
16 BOF Circum,Right	0.211	2.00	0.30	0.193	2.13	0.28
17 Heel Breadth,Right	0.438	4.23	0.35	0.332	4.41	0.32
18 BOF Breadth,Diagonal	0.447	2.60	0.32	0.400	2.71	0.29
19 Heel Breadth,Left	-	-	-	-	-	-
20 BOF Circum,Left	-	-	-	-	-	-
21 Weight	0.019	5.89	0.34	0.029	4.78	0.29
22 Ankle Length	0.319	3.85	0.33	0.313	3.49	0.29
23 Instep Length	0.265	4.29	0.35	0.245	4.01	0.30
24 BOF Length,Right	0.237	2.66	0.31	0.162	3.64	0.30
25 Foot Length,Right	0.187	2.27	0.31	0.150	2.87	0.29
26 BOF Breadth,Hoz,Right	0.416	3.11	0.33	0.368	3.15	0.31
27 Outside BOF Length	0.215	3.72	0.34	0.162	4.09	0.31
28 5th Toe Length	0.208	2.79	0.33	0.151	3.57	0.31
29 BOF Length,Left	-	-	-	-	-	-
30 Foot Length,Left	-	-	-	-	-	-
31 BOF Breadth,Hoz,Left	-	-	-	-	-	-
32 Bimalleolar Breadth	-	-	-	-	-	-
33 1st-3rd Toe Breadth	0.288	5.24	0.37	0.242	4.96	0.34

*Not significant at p=0.05

286

Table 119. Simple Regression Equations for Estimating 1st-3rd Toe Breadth (VAR 33)

		Male			Female		
	Predicted Variable	Slope	Const.	SEE	Slope	Const.	SEE
1	Stature	0.024	3.02	0.51	0.014	4.12	0.42
2	Calf Height	NS*			0.016	5.92	0.43
3	Ankle Height	NS			0.084	5.52	0.42
4	Med Malleolus Height	0.231	5.32	0.51	0.121	5.57	0.42
5	Lat Malleolus Height	0.145	6.14	0.52	0.100	5.78	0.42
6	Dorsal Arch Height	0.242	5.04	0.51	0.163	5.12	0.42
7	Plantar Arch Height	0.102	6.88	0.53	NS		
8	Ball of Foot Height	0.678	4.54	0.50	0.422	4.92	0.42
9	1st Toe Height	0.516	6.06	0.52	0.440	5.58	0.42
10	Maximum Toe Height	NS			0.238	5.89	0.42
11	Outside BOF Height	0.506	5.71	0.51	0.454	5.21	0.42
12	Calf Circumference	0.062	4.89	0.51	0.055	4.52	0.41
13	Ankle Circumference	0.171	3.37	0.48	0.115	4.05	0.41
14	Heel-Ankle Circum	0.118	3.15	0.49	0.096	3.46	0.41
15	Instep Circumference	0.169	2.77	0.48	0.158	2.75	0.40
16	BOF Circum,Right	0.209	1.94	0.46	0.174	2.48	0.38
17	Heel Breadth,Right	0.284	5.20	0.52	0.233	4.96	0.42
18	BOF Breadth,Diagonal	0.400	2.98	0.48	0.360	3.01	0.39
19	Heel Breadth,Left	–	–	–	–	–	–
20	BOF Circum,Left	–	–	–	–	–	–
21	Weight	0.017	5.92	0.50	0.017	5.42	0.41
22	Ankle Length	0.207	4.95	0.51	0.168	4.82	0.42
23	Instep Length	0.131	5.70	0.52	0.097	5.44	0.42
24	BOF Length,Right	0.113	4.97	0.52	0.061	5.35	0.42
25	Foot Length,Right	0.105	4.37	0.51	0.081	4.47	0.42
26	BOF Breadth,Hoz,Right	0.403	3.12	0.49	0.384	2.93	0.39
27	Outside BOF Length	0.093	5.64	0.52	NS		
28	5th Toe Length	0.100	5.03	0.52	0.052	5.42	0.42
29	BOF Length,Left	–	–	–	–	–	–
30	Foot Length,Left	–	–	–	–	–	–
31	BOF Breadth,Hoz,Left	–	–	–	–	–	–
32	Bimalleolar Breadth	0.502	3.52	0.49	0.359	4.10	0.41
33	1st-3rd Toe Breadth	–	–	–	–	–	–

*Not significant at p=0.05

CHAPTER V

MULTIPLE REGRESSION AND CORRELATION

Introduction

In the preceding chapter, the functional relationship between any two variables was expressed by the simple regression equation, and the strength of the bivariate relationship was measured by the correlation coefficient. In a sense, the accuracy and magnitude of the correlation coefficient are largely determined by the amount of variation of a variable that is "explained" by the other. Thus, unless a perfect correlation exists between two variables, a certain amount of variation of the dependent variable will remain unexplained.

Depending on the extent of the unexplained variability, the inclusion of additional independent variables in a regression function may significantly enhance the predictive ability of the regression equation, thereby reducing the amount of residual variability of the dependent variable. A predictive function that utilizes two or more independent variables to estimate a single dependent variable is called a multiple regression equation. The multiple regression equation is expressed as:

$$Y = a + b_1X_1 + b_2X_2 + \ldots\ldots b_nX_n$$

where Y is the dependent variable; a is the constant; b_1, b_2, b_n are regression coefficients corresponding to each independent variable; and X_1, X_2, X_n are the independent variables.

The regression coefficients in the multiple regression equation are in effect partial regression coefficients because "they reflect the partial effect of one indepedent variable when the other independent variables included in that model are held constant" (Neter and Wasserman, 1974:217). Also, whereas the simple regression equation was that for a straight line fitted through the bivariate distribution of points, the multiple regression is representative of a "response surface," the configuration of which becomes increasingly more complex with the addition of more independent variables in the model (Neter and Wasserman, 1974:215).

As with a bivariate correlation, the concept of the strength of relationship among several variables cant be applied to multiple correlation. The measure of the joint covariation among several variables is the multiple correlation coefficient, which is usually statistically designated as "R". The multiple correlation coefficient can perhaps be best understood by considering its relationship to multiple regression. To reiterate, the predictive function for any dependent variable (Y) essentially aims to minimize the unexplained variability. Thus, with respect to the regression of Y on a particular suite of independent variables in the model, the total variation of Y comprises the variation explained by the regression and the remaining unexplained variation,

the residual variation. These components of the total variation in Y can be stated in terms of the "sums of squares" of Y (i.e., the squared deviations from the mean of Y) as follows:

$$SS_Y = SS_{reg} + SS_{res}$$

where $SS_Y = (Y-Y)^2$, the total sums of squares of Y; $SS_{reg} = (Y'-Y)^2$, the regression sums of squares; and $SS_{res} = (Y-Y')^2$, the residual sums of squares. The sums of squares can then be used to derive the coefficient of multiple correlation as follows:

$$R = (\frac{SS_Y - SS_{res}}{SS_Y}) = \frac{SS_{reg}}{SS_Y}$$

Another way to consider the multiple correlation coefficient is as a simple correlation between values predicted by the regression (Y') and actual values of Y. However, a multiple correlation coefficient is best interpreted by its square. Designated R^2, the <u>coefficient of multiple determination</u> is essentially a measure of the proportion of the total variation that is explained by the regression. Thus, it provides an indication of the efficacy of the predictive function, and, unless R^2 is equal to 1.0, a proportion of the residual variation remains unexplained.

As with the simple regression equation, the multiple regression equation also has an associated standard error of estimate (SEE). Again, the SEE essentially represents the standard devination of actual values of the dependent variable (Y) from the predicted values of the dependent variable (Y').

The purpose of this chapter is to present multiple regression equations with associated statistics for the foot and leg variables. Obviously, not every possible multiple relationship among variables will be expressed by the equations and statistics presented herein. Given that there are a total of 33 variables, the number of possible combinations of independent variables in the equations is enormous. Hence, the multiple relationships chosen for inclusion in this report consist of two specific types of multiple regression equations which provide the most salient statistical information among the variables. First, equations in which <u>select</u> pairs (i.e., four pairs) of dimensions are utilized as predictors of the other variables are presented. Secondly, multiple regression equations generated by a stepwise procedure are presented. Both types are discussed in more detail in their respective sections below.

Multiple Regression Equations with Select
Pairs of Variables as Predictors

As indicated above, four specific pairs of dimensions were utilized as predictor variables to generate multiple regression equations for the other variables. These include: BOF Length and BOF Breadth, Horizontal; Foot Length and BOF Breadth, Horizontal; BOF Length and BOF Circumference; and Foot Length with BOF Circumference. These variables were selected because they are most commonly used as key dimensions in the design and sizing of footwear.

290

Tables 120 to 123 present the information for males, and Tables 124 to 127 present the information for females. Each table shows the multiple correlations (designated "MULT CORR") and regression equations for each variable as predicted by one specific variable pair. The standard error of estimate (SEE) for each equation is also presented. It should be noted that, in some cases, the coefficient for one or the other predictor variables is not always significantly different from zero. When this occurs, the bivariate correlation coefficient and the simple regression equation have been inserted. Also, in five cases the multiple regression equations are not statistically significant and thus no information is provided for these relationships. Finally, regression equations were not developed for the left side measurements.

Table 120. Multiple Correlation Coefficients and Regression Equations with BOF Length, Right (X) and BOF Breadth, Horizontal, Right (Y) as Predictor Variables -- Male

PREDICTED VARIABLE	MULT CORR	EQUATIONS A	B	C	SEE
1 Stature	0.674	3.811X +	2.015Y +	80.43	5.27
2 Calf Height*	0.615	1.326X	+	8.19	1.83
3 Ankle Height*	0.478	0.431X	+	4.22	0.85
4 Med Malleolus Height***	0.195	0.118X	+	5.78	0.64
5 Lat Malleolus Height**	-	-	-	-	-
6 Dorsal Arch Height*	0.284		0.340Y +	5.44	0.62
7 Plantar Arch Height**	-	-	-	-	-
8 Ball of Foot Height*	0.411		0.215Y +	1.74	0.26
9 1st Toe Height	0.294	0.027X +	0.073Y +	0.93	0.20
10 Maximum Toe Height	0.468	0.068X +	0.121Y -	0.02	0.23
11 Outside BOF Height	0.474	0.082X +	0.119Y +	0.12	0.25
12 Calf Circumference	0.518	0.416X +	1.992Y +	8.71	2.29
13 Ankle Circumference	0.579	0.410X +	0.886Y +	5.38	1.15
14 Heel-Ankle Circum	0.820	0.885X +	1.044Y +	6.36	0.95
15 Instep Circumference	0.804	0.522X +	1.179Y +	4.01	0.78
16 BOF Circum,Right	0.857	0.334X +	1.529Y +	3.19	0.65
17 Heel Breadth,Right	0.590	0.166X +	0.224Y +	1.50	0.37
18 BOF Breadth,Diagonal	0.879	0.158X +	0.702Y +	0.36	0.27
21 Weight	0.620	4.129X +	6.734Y -	73.42	9.05
22 Ankle Length	0.798	0.471X +	0.211Y -	0.55	0.44
23 Instep Length*	0.775	0.564X	+	0.28	0.50
25 Foot Length,Right	0.907	1.058X +	0.312Y +	3.02	0.58
27 Outside BOF Length	0.799	0.691X +	0.198Y +	1.07	0.61
28 5th Toe Length	0.856	0.772X +	0.389Y +	2.62	0.58
32 Bimalleolar Breadth	0.683	0.173X +	0.231Y +	1.58	0.30
33 1st-3rd Toe Breadth*	0.412		0.403Y +	3.12	0.49

*The regression coefficient for either the X or Y predictor variable does not significantly differ from zero; thus the bivariate correlation coefficient and the simple regression equation are presented.
**The F value for this multiple regression is not significant at $p \leq 0.05$.

NOTE,Tables 120-127: In the heading for the equations, the letter A refers to the regression coefficient for the first predictor variable (X), the letter B refers to the regression coefficient for the second predictor variable (Y), and the letter C refers to the constant.

Table 121. Multiple Correlation Coefficients and Regression Equations with
Foot Length, Right (X) and BOF Breadth, Horizontal, Right (Y)
as Predictor Variables -- Male

PREDICTED VARIABLES	MULT CORR	EQUATIONS A	B	C	SEE
1 Stature	0.692	3.263X +	1.341Y +	74.16	5.15
2 Calf Height*	0.632	1.071X	+	5.40	1.80
3 Ankle Height*	0.480	0.340X	+	3.54	0.85
4 Med Malleolus Height**	0.257	0.122X	+	4.82	0.63
5 Lat Malleolus Height**	—	—	—	—	—
6 Dorsal Arch Height*	0.284		0.340Y +	5.44	0.62
7 Plantar Arch Height**	—	—	—	—	—
8 Ball of Foot Height	0.452	0.057X +	0.118Y +	1.18	0.25
9 1st Toe Height	0.270		0.104Y +	1.15	0.20
10 Maximum Toe Height	0.449	0.046X +	0.129Y +	0.02	0.24
11 Outside BOF Height	0.455	0.057X +	0.125Y +	0.14	0.25
12 Calf Circumference	0.517	0.325X +	1.968Y +	8.37	2.29
13 Ankle Circumference	0.582	0.341X +	0.833Y +	4.79	1.14
14 Heel-Ankle Circum	0.827	0.736X +	0.929Y +	5.09	0.93
15 Instep Circumference	0.804	0.423X +	1.127Y +	3.40	0.78
16 BOF Circum,Right	0.857	0.274X +	1.491Y +	2.75	0.65
17 Heel Breadth,Right	0.573	0.122X +	0.226Y +	1.46	0.37
18 BOF Breadth,Diagonal	0.868	0.105X +	0.718Y +	0.45	0.28
21 Weight	0.607	3.092X +	6.638Y −	74.67	9.17
22 Ankle Length	0.762	0.349X +	0.211Y −	0.70	0.47
23 Instep Length*	0.726	0.415X	+	0.18	0.54
24 BOF Length,Right*	0.903	0.709X	+	0.55	0.46
27 Outside BOF Length*	0.812	0.599X	+	0.49	0.59
28 5th Toe Length	0.867	0.642X +	0.289Y +	1.51	0.56
32 Bimalleolar Breadth	0.675	0.135X +	0.221Y +	1.44	0.30
33 1st-3rd Toe Breadth*	0.412		0.403Y +	3.12	0.49

*The regression coefficient for either the X or Y predictor variable does
not significantly differ from zero; thus the bivariate correlation coeffi-
cient and the simple regression equation are presented.
**The F value for this multiple regression is not significant at p≤0.05.

Table 122. Multiple Correlation Coefficients and Regression Equations with
BOF Length, Right (X) and BOF Circumference, Right (Y) as Predictor
Variables -- Male

PREDICTED VARIABLE	MULT CORR	EQUATIONS A	B	C	SEE
1 Stature	0.686	3.313X +	1.375Y +	75.94	5.19
2 Calf Height*	0.615	1.326X	+	8.19	1.83
3 Ankle Height*	0.478	0.431X	+	4.22	0.85
4 Med Malleolus Height*	0.296		0.152Y +	4.28	0.62
5 Lat Maleolus Height*	0.224		0.128Y +	4.04	0.71
6 Dorsal Arch Height*	0.398		0.204Y +	3.74	0.60
7 Plantar Arch Height	0.233	-0.155X +	0.133Y +	2.73	0.59
8 Ball of Foot Height	0.586	-0.054X +	0.156Y +	1.04	0.23
9 1st Toe Height*	0.360		0.060Y +	0.70	0.20
10 Maximum Toe Height	0.478	0.053X +	0.064Y -	0.12	0.23
11 Outside BOF Height	0.545	0.040X +	0.099Y -	0.34	0.24
12 Calf Circumference*	0.610		1.278Y +	4.78	2.11
13 Ankle Circumference*	0.679		0.752Y +	3.43	1.03
14 Heel-Ankle Circum	0.856	0.674X +	0.661Y +	4.41	0.85
15 Instep Circumference	0.871	0.293X +	0.732Y +	1.96	0.65
17 Heel Breadth,Right	0.589	0.147X +	0.107Y +	1.44	0.37
18 BOF Breadth,Diagonal	0.944	0.053X +	0.394Y -	0.43	0.19
21 Weight	0.672	2.542X +	4.492Y -	87.37	8.54
22 Ankle Length	0.805	0.432X +	0.128Y -	0.90	0.43
23 Instep Length*	0.775	0.564X	+	0.28	0.50
25 Foot Length,Right	0.909	1.017X +	0.168Y +	2.74	0.57
26 BOF Breadth,Hoz,Right*	0.824		0.353Y +	1.19	0.31
27 Outside BOF Length*	0.794	0.747X	+	1.96	0.62
28 5th Toe Length	0.844	0.816X +	0.083Y +	3.58	0.61
32 Bimalleolar Breadth	0.715	0.129X +	0.142Y +	1.19	0.28
33 1st-3rd Toe Breadth	0.504	-0.074X +	0.252Y +	2.30	0.46

*The regression coefficient for either the X or Y predictor variable does
not significantly differ from zero; thus the bivariate correlation coeffi-
cient and the simple regression equation are presented.

Table 123. Multiple Correlation Coefficients and Regression Equations with Foot Length, Right (X) and BOF Circumference, Right (Y) as Predictor Variables -- Male

PREDICTED VARIABLE	MULT CORR	EQUATIONS A	B	C	SEE
1 Stature	0.072	2.888X +	1.095Y +	70.24	5.09
2 Calf Height*	0.632	1.071X	+	5.40	1.80
3 Ankle Height*	0.480	0.340X	+	3.54	0.85
4 Med Malleolus Height*	0.296		0.152Y +	4.28	0.62
5 Lat Malleolus Height*	0.224		0.128Y +	4.04	0.71
6 Dorsal Arch Height	0.399	0.087X +	0.127Y +	3.32	0.59
7 Plantar Arch Height**	-	-	-	-	-
8 Ball of Foot Height*	0.587		0.131Y +	0.60	0.23
9 1st Toe Height*	0.360		0.060Y +	0.70	0.20
10 Maximum Toe Height	0.465	0.032X +	0.071Y -	0.09	0.23
11 Outside BOF Height*	0.524		0.116Y +	0.004	0.24
12 Calf Circumference*	0.610		1.278Y +	4.78	2.11
13 Ankle Circumference*	0.679		0.752Y +	3.43	1.03
14 Heel-Ankle Circum	0.861	0.567X +	0.620Y +	3.40	0.84
15 Instep Circumference	0.871	0.237X +	0.722Y +	1.60	0.65
17 Heel Breadth,Right	0.575	0.105X +	0.112Y +	1.38	0.37
18 BOF Breadth,Diagonal*	0.941		0.416Y +	0.06	0.19
21 Weight	0.665	1.720X +	4.641Y -	87.53	8.62
22 Ankle Length	0.772	0.310X +	0.142Y -	1.09	0.46
23 Instep Length*	0.726	0.415X	+	0.18	0.54
24 BOF Length,Right	0.903	0.669X +	0.066Y -	0.04	0.46
26 BOF Breadth,Hoz,Right*	0.824		0.353Y +	1.19	0.31
27 Outside BOF Length*	0.812	0.599X	+	0.49	0.59
28 5th Toe Length*	0.864	0.717X	+	2.38	0.57
32 Bimalleolar Breadth	0.709	0.098X +	0.142Y +	1.08	0.28
33 1st-3rd Toe Breadth*	0.497		0.209Y +	1.94	0.46

*The regression coefficient for either the X or Y predictor variable does not significantly differ from zero; thus the bivariate correlation coefficient and the simple regression equation are presented.
**The F value for this multiple regression is not significant at $p \leq 0.05$.

Table 124. Multiple Correlation Coefficients and Regression Equations with
BOF Length, Right (X) and BOF Breadth, Horizontal, Right (Y) as
Predictor Variables -- Female

		MULT	EQUATIONS			
PREDICTED VARIABLE		CORR	A	B	C	SEE
1	Stature	0.668	3.410X +	2.676Y +	76.86	4.93
2	Calf Height	0.620	1.271X +	0.468Y +	4.87	1.91
3	Ankle Height	0.547	0.364X +	0.330Y +	1.35	0.74
4	Med Malleolus Height*	0.211		0.312Y +	4.32	0.66
5	Lat Malleolus Height*	0.164		0.246Y +	4.34	0.68
6	Dorsl Arch Height	0.322	0.061X +	0.345Y +	3.81	0.58
7	Plantar Arch Height*	-0.143	-0.077X	+	4.26	0.59
8	Ball of Foot Height*	0.295		0.153Y +	2.18	0.23
9	1st Toe Height	0.404	0.046X +	0.099Y +	0.21	0.18
10	Maximum Toe Height	0.445	0.062X +	0.105Y +	0.24	0.20
11	Outside BOF Height	0.385	0.045X +	0.122Y +	0.77	0.22
12	Calf Circumference*	0.350		1.566Y +	20.87	1.91
13	Ankle Circumference	0.429	0.124X +	0.890Y +	10.49	1.02
14	Heel-Ankle Circum	0.809	0.762X +	1.116Y +	7.18	0.84
15	Instep Circumference	0.780	0.353X +	1.267Y +	5.46	0.66
16	BOF Circum,Right	0.862	0.233X +	1.736Y +	2.66	0.55
17	Heel Breadth,Right	0.600	0.134X +	0.341Y +	0.84	0.34
18	BOF Breadth,Diagonal	0.888	0.123X +	0.768Y +	0.30	0.22
21	Weight	0.559	2.009X +	4.868Y -	19.87	5.57
22	Ankle Length	0.766	0.391X +	0.214Y +	0.76	0.40
23	Instep Length*	0.799	0.524X	+	0.92	0.43
25	Foot Length,Right	0.918	1.002X +	0.423Y +	2.72	0.52
27	Outside BOF Length*	0.810	0.723X	+	2.08	0.58
28	5th Toe Length	0.797	0.757X +	0.308Y +	3.31	0.69
32	Bimalleolar Breadth	0.581	0.118X +	0.246Y +	2.17	0.29
33	1st-3rd Toe Breadth*	0.408		0.384Y +	2.93	0.39

*The regression coefficient for either the X or Y predictor variable does
not significantly differ from zero; thus the bivariate correlation coeffi-
cient and the simple regression equation are presented.

Table 125. Multiple Correlation Coefficients and Regression Equations With Foot Length, Right (X) and BOF Breadth, Horizontal, Right (Y) as Predictor Variables -- Female

PREDICTED VARIABLE	MULT CORR	EQUATIONS A B C			SEE
1 Stature	0.738	3.535X + 1.043Y +		66.11	4.48
2 Calf Height*	0.677	1.257X +		1.07	1.77
3 Ankle Height	0.578	0.354X + 0.189Y +		0.46	0.72
4 Med Malleolus Height*	0.252	0.075X + 0.214Y +		3.38	0.66
5 Lat Malleolus Height*	0.164	0.246Y +		4.34	0.68
6 Dorsal Arch Height	0.375	0.118X + 0.236Y +		3.01	0.57
7 Plantar Arch Height**	-	- -		-	-
8 Ball of Foot Height	0.332	0.026X + 0.122Y +		1.83	0.22
9 1st Toe Height	0.401	0.040X + 0.089Y +		0.15	0.18
10 Maximum Toe Height	0.429	0.050X + 0.096Y +		0.21	0.20
11 Outside BOF Height	0.382	0.039X + 0.112Y +		0.72	0.22
12 Calf Circumference*	0.350	1.566Y +		20.87	1.91
13 Ankle Circumference	0.442	0.155X + 0.792Y +		9.80	1.01
14 Heel-Ankle Circum	0.852	0.754X + 0.803Y +		5.17	0.75
15 Instep Circumference	0.791	0.337X + 1.140Y +		4.67	0.65
16 BOF Circum,Right	0.866	0.221X + 1.654Y +		2.15	0.54
17 Heel Breadth,Right	0.620	0.133X + 0.286Y -		0.49	0.34
18 BOF Breadth,Diagonal	0.882	0.099X + 0.750Y +		0.22	0.23
21 Weight	0.587	2.073X + 3.919Y -		26.10	5.44
22 Ankle Length	0.764	0.345X + 0.114Y +		0.19	0.40
23 Instep Length*	0.802	0.446X -		0.64	0.43
24 BOF Length,Right	0.909	0.785X - 0.114Y -		0.36	0.46
27 Outside BOF Length	0.851	0.678X - 0.194Y +		0.15	0.52
28 5th Toe Length	0.862	0.745X +		1.41	0.57
32 Bimalleolar Breadth	0.598	0.113X + 0.203Y +		1.90	0.28
33 1st-3rd Toe Breadth*	0.408	0.384Y +		2.93	0.39

*The regression coefficient for either the X or Y predictor variable does not significantly differ from zero; thus the bivariate correlation coefficient and the simple regression equation are presented.
**The $\underline{F}$ value for this multiple regression is not significant at $p \leq 0.05$.

Table 126. Multiple Correlation Coefficients and Regression Equations with
BOF Length, Right (X) and BOF Circumference, Right (Y)
as Predictor Variables -- Female

		MULT	EQUATIONS			SEE
PREDICTED VARIABLE		CORR	A	B	C	
1	Stature	0.678	3.072X +	1.504Y +	73.25	4.87
2	Calf Height*	0.617	1.354X	+	7.69	1.90
3	Ankle Height	0.553	0.330X +	0.170Y +	1.11	0.74
4	Med Malleolus Height*	0.297		0.186Y +	2.96	0.64
5	Lat Malleolus Height	0.251	-0.068X +	0.187Y +	3.54	0.67
6	Dorsal Arch Height*	0.401		0.227Y +	2.91	0.56
7	Plantar Arch Height	0.238	-0.144X +	0.128Y +	2.55	0.58
8	Ball of Foot Height	0.489	-0.049X +	0.126Y +	1.59	0.21
9	1st Toe Height	0.415	0.037X +	0.050Y +	0.15	0.18
10	Maximum Toe Height	0.455	0.052X +	0.053Y +	0.17	0.20
11	Outside BOF Height	0.451	0.022X +	0.082Y +	0.43	0.21
12	Calf Circumference*	0.452		0.860Y +	15.68	1.82
13	Ankle Circumference*	0.550		0.571Y +	7.88	0.93
14	Heel-Ankle Circum	0.850	0.605X +	0.656Y +	5.30	0.75
15	Instep Circumference	0.848	0.201X +	0.698Y +	3.93	0.56
17	Heel Breadth,Right	0.596	0.112X +	0.152Y +	0.89	0.34
18	BOF Breadth,Diagonal	0.946	0.047X +	0.392Y -	0.22	0.16
21	Weight	0.637	1.156X +	3.173Y -	32.14	5.18
22	Ankle Length	0.776	0.358X +	0.131Y +	0.33	0.40
23	Instep Length	0.803	0.495X +	0.057Y +	0.16	0.43
25	Foot Length,Right	0.920	0.962X +	0.213Y +	2.48	0.51
26	BOF Breadth,Hoz,Right*	0.833		0.354Y +	1.12	0.25
27	Outside BOF Length	0.817	0.774X -	0.074Y +	2.86	0.57
28	5th Toe Length	0.793	0.757X +	0.102Y +	3.82	0.69
32	Bimalleolar Breadth	0.629	0.082X +	0.147Y +	1.73	0.27
33	1st-3rd Toe Breadth	0.453	-0.046X +	0.202Y +	2.67	0.39

*The regression coefficient for either the X or Y predictor variable does
not significantly differ from zero; thus the bivariate correlation coeffi-
cient and the simple regression equation are presented.

Table 127. Multiple Correlation Coefficient and Regression Equations with Foot Length, Right (X) and BOF Circumference, Right (Y) as Predictor Variables — Female

PREDICTED VARIABLE	MULT CORR	EQUATIONS A B C			SEE
1 Stature *	0.740	3.362X + 0.697Y +	64.08		4.46
2 Calf Height*	0.677	1.257X	+	1.07	1.77
3 Ankle Height *	0.581	0.334X + 0.104Y +	0.32		0.72
4 Med Malleolus Height*	0.297	0.186Y +	2.96		0.64
5 Lat Malleolus Height*	0.027	0.145Y +	3.30		0.67
6 Dorsal Arch Height	0.426	0.066X + 0.182Y +	2.31		0.55
7 Plantar Arch Height*	0.169	-0.086X + 0.111Y +	2.44		0.59
8 Ball of Foot Height*	0.438	0.096Y +	1.40		0.21
9 1st Toe Height	0.412	0.032X + 0.047Y +	0.10		0.18
10 Maximum Toe Height*	0.441	0.040X + 0.052Y +	0.14		0.20
11 Outside BOF Height*	0.430	0.092Y +	0.60		0.21
12 Calf Circumference*	0.452	0.860Y +	15.68		1.82
13 Ankle Circumference*	0.550	0.571Y +	7.88		0.93
14 Heel-Ankle Circum	0.879	0.627X + 0.523Y +	3.75		0.68
15 Instep Circumference	0.852	0.200X + 0.660Y +	3.48		0.55
17 Heel Breadth,Right	0.614	0.119X + 0.126Y +	0.59		0.34
18 BOF Breadth,Diagonal	0.943	0.028X + 0.397Y -	0.18		0.16
21 Weight	0.648	1.308X + 2.837Y -	35.91		5.12
22 Ankle Length *	0.771	0.318X + 0.092Y -	0.19		0.40
23 Instep Length*	0.802	0.446X -	0.64		0.43
24 BOF Length,Right*	0.909	0.769X -	1.00		0.46
26 BOF Breadth,Hoz,Right*	0.833	0.354Y +	1.12		0.25
27 Outside BOF Length	0.865	0.749X - 0.204Y +	1.27		0.50
28 5th Toe Length*	0.862	0.745X +	1.41		0.57
32 Bimalleolar Breadth*	0.637	0.081X + 0.132Y +	1.55		0.27
33 1st-3rd Toe Breadth*	0.437	0.174Y +	2.48		0.38

*The regression coefficient for either the X or Y predictor variable does not significantly differ from zero; thus the bivariate correlation coefficient and the simple regression equation are presented.

Stepwise Multiple Regressions

The stepwise procedure is a method that develops multiple regression equations which include the "best" combination of independent variables as predictors of the dependent variable. In other words, the aim is to "isolate a subset of predictor variables that will yield an optimal prediction equation with as few terms as possible" (Nie et al., 1975:345). There are several variations of the stepwise procedure which can be used to develop the equations. Perhaps the most commonly used is stepwise forward inclusion. In this procedure the first variable entered into the equation is the one which explains the greatest amount of variation in the dependent variable, that is, the independent variable which yields the highest R^2 with the dependent variable. The next variable entered will be the one which yields the greatest significant increase in the R^2. The procedure is repeated for all subsequent independent variables. It is important to note that, at each step, all previously included independent variables are reconsidered for their effect on the R^2. This is done because the interrelationships among the independent variables could change and a previously included variable may no longer significantly increase the R^2.

The stepwise forward inclusion method was used to develop the equations in this report. The stepwise multiple regression equations for the Fort Jackson data are presented in Tables 128 to 183. For each predictive function the stepwise procedure was followed up to a limit of five steps (i.e., five independent variables). Each step essentially represents a single multiple regression equation with associated statistics. Each table shows the five steps for each respective dependent variable. The equation at each step is to be read in a columnar fashion with the regression coefficients corresponding to the variables entered in each step. Left side measurements were not used as predictor variables in the equations nor were predictive functions developed for them as dependent variables. Each male table for a specific dependent variable is followed by the female table for that variable.

Table 128. Stepwise Multiple Regression Equations for Estimating Stature (VAR 1) — Male

Variable	Step				
	1	2	3	4	5
14 Heel-Ankle Circumference	3.106	2.088	1.579	0.932	
2 Calf Height		1.214	1.249	1.092	
4 Medial Malleolus Height			3.034	3.346	
24 BOF Length,Right				1.455	
6 Dorsal Arch Height					
Constant	69.182	62.398	54.060	50.500	
Standard Error of Estimate	4.98	4.44	4.06	3.95	
Multiple Correlation	0.717	0.785	0.825	0.836	

Table 129. Stepwise Multiple Regression Equations for Estimating Stature (VAR 1) — Female

Variable	Step				
	1	2	3	4	5
25 Foot Length,Right	3.727	3.480	2.388	2.204	2.478
5 Lateral Malleolus Height		3.220	2.876	1.904	1.804
2 Calf Height			0.887	0.949	1.023
4 Medial Malleolus Height				1.592	1.477
17 Heel Breadth,Right					-1.886
Constant	70.943	55.766	56.513	54.029	58.437
Standard Error of Estimate	4.49	3.92	3.59	3.50	3.44
Multiple Correlation	0.735	0.807	0.841	0.850	0.856

Table 130. Stepwise Multiple Regression Equations for Estimating Calf Height (VAR 2) -- Male

Variable	Step 1	2	3	4	5
28 5th Toe Length	1.323	0.928	0.778	0.727	0.788
14 Heel-Ankle Circumference		0.354	0.865	0.928	1.014
13 Ankle Circumference			-0.691	-0.614	-0.542
33 1st-3rd Toe Breadth				-0.639	-0.585
32 Bimalleolar Breadth					-0.985
Constant	5.580	2.007	3.222	5.024	5.957
Standard Error of Estimate	1.79	1.75	1.63	1.60	1.58
Multiple Correlation	0.641	0.662	0.718	0.727	0.739

Table 131. Stepwise Multiple Regression Equations for Estimating Calf Height (VAR 2) -- Female

Variable	Step 1	2	3	4	5
25 Foot Length,Right	1.260	0.971	0.782	0.925	0.863
3 Ankle Height		0.745	0.764	0.826	0.808
17 Heel Breadth,Right			0.990	1.339	1.074
18 BOF Breadth,Diagonal				-0.994	-1.440
15 Instep Circumference					0.409
Constant	9.887	-0.027	-1.894	1.183	-7.356
Standard Error of Estimate	1.79	1.70	1.67	1.64	1.62
Multiple Correlation	0.678	0.713	0.728	0.742	0.748

Table 132. Stepwise Multiple Regression Equations for Estimating Ankle Height (VAR 3) -- Male

	Variable	Step				
		1	2	3	4	5
24	BOF Length,Right	0.432	0.379	0.535	0.332	
6	Dorsal Arch Height		0.378	0.560	0.384	
13	Ankle Circumference			-0.278	-0.389	
14	Heel-Ankle Circumference				0.257	
	Constant	4.205	1.901	3.437	2.678	
	Standard Error of Estimate	0.85	0.82	0.76	0.74	
	Multiple Correlation	0.481	0.538	0.63	0.658	

Table 133. Stepwise Multiple Regression Equations for Estimating Ankle Height (VAR 3) -- Female

	Variable	Step				
		1	2	3	4	5
25	Foot Length,Right	0.388	0.321	0.371	0.281	0.286
6	Dorsal Arch Height		0.418	0.559	0.590	0.399
13	Ankle Circumference			-0.245	-0.380	-0.412
32	Bimalleolar Breadth				0.832	0.850
4	Medial Malleolus Ht					0.286
	Constant	1.363	-0.369	2.379	1.691	1.616
	Standard Error of Estimate	0.72	0.68	0.64	0.61	0.59
	Multiple Correlation	0.573	0.633	0.691	0.728	0.746

Table 134. Stepwise Multiple Regression Equations for Estimating Medial
Malleolus Height (VAR 4) — Male

Variable	Step				
	1	2	3	4	5
6 Dorsal Arch Height	0.743	0.484	0.396	0.364	
5 Lateral Malleolus Height		0.372	0.332	0.329	
7 Plantar Arch Height			0.186	0.202	
12 Calf Circumference				-0.025	
Constant	1.513	1.108	1.618	9.620	
Standard Error of Estimate	0.45	0.39	0.39	0.38	
Multiple Correlation	0.728	0.798	0.808	0.813	

Table 135. Stepwise Multiple Regression Equations for Estimating Medial
Malleolus Height (VAR 4) — Female

Variable	Step				
	1	2	3	4	5
6 Dorsal Arch Height	0.726	0.470	0.401	0.331	0.244
5 Lateral Malleolus Height		0.340	0.338	0.297	0.275
13 Ankle Circumference			0.097	0.091	0.105
7 Plantar Arch Height				0.173	0.214
3 Ankle Height					0.106
Constant	1.335	1.154	-0.293	0.152	-0.541
Standard Error of Estimate	0.51	0.48	0.47	0.47	0.46
Multiple Correlation	0.652	0.701	0.717	0.726	0.736

Table 136. Stepwise Multiple Regression Equations for Estimating Lateral
Malleolus Height (VAR 5) — Male

Variable	Step				
	1	2	3	4	5
4 Medial Malleolus Height	0.782	0.793	0.674	0.554	0.555
17 Heel Breadth,Right		-0.255	-0.576	-0.544	-0.558
14 Heel-Ankle Circumference			0.131	0.127	0.169
7 Plantar Arch Height				0.209	0.177
32 Bimalleolar Breadth					-0.214
Constant	0.916	2.620	1.343	1.588	1.900
Standard Error of Estimate	0.52	0.50	0.48	0.48	0.47
Multiple Correlation	0.705	0.722	0.746	0.758	0.762

Table 137. Stepwise Multiple Regression Equations for Estimating Lateral
Malleolus Height (VAR 5) — Female

Variable	Step				
	1	2	3	4	5
6 Dorsal Arch Height	0.752	0.503	0.414	0.444	0.390
4 Medial Malleolus Height		0.344	0.297	0.310	0.291
7 Plantar Arch Height			0.204	0.187	0.218
32 Bimalleolar Breadth				-0.178	-0.230
3 Ankle Height					0.087
Constant	0.530	0.071	0.535	1.418	1.293
Standard Error of Estimate	0.52	0.49	0.48	0.48	0.47
Multiple Correlation	0.663	0.711	0.723	0.728	0.734

Table 138. Stepwise Multiple Regression Equations for Estimating Dorsal Arch Height (VAR 6) -- Male

Variable	Step 1	2	3	4	5
4 Medial Malleolus Height	0.714	0.600	0.481	0.332	0.305
14 Heel-Ankle Circumference		0.113	0.285	0.260	0.210
22 Ankle Length			-0.455	-0.377	-0.436
7 Plantar Arch Height				0.280	0.329
25 Foot Length,Right					0.107
Constant	3.086	0.124	0.132	0.502	0.034
Standard Error of Estimate	0.44	0.40	0.35	0.33	0.32
Multiple Correlation	0.728	0.776	0.837	0.860	0.869

Table 139. Stepwise Multiple Regression Equations for Estimating Dorsal Arch Height (VAR 6) -- Female

Variable	Step 1	2	3	4	5
5 Lateral Malleolus Height	0.584	0.503	0.404	0.276	0.206
14 Heel-Ankle Circumference		0.157	0.326	0.298	0.280
22 Ankle Length			-0.469	-0.394	-0.382
7 Plantar Arch Height				0.298	0.244
4 Medial Malleolus Height					0.171
Constant	4.201	-0.115	-0.152	-0.042	-0.216
Standard Error of Estimate	0.46	0.40	0.36	0.33	0.32
Multiple Correlation	0.663	0.752	0.808	0.842	0.853

Table 140. Stepwise Multiple Regression Equations for Estimating Plantar
Arch Height (VAR 7) — Male

Variable	Step 1	2	3	4	5
6 Dorsal Arch Height	0.623	0.722	0.498	0.444	0.452
25 Foot Length,Right		-0.131	-0.129	-0.149	-0.110
4 Medial Malleolus Height			0.300	0.264	0.249
8 Ball of Foot Height				0.388	0.464
32 Bimalleolar Breadth					-0.239
Constant	-2.500	0.151	-0.336	-0.557	-0.939
Standard Error of Estimate	0.45	0.42	0.40	0.39	0.38
Multiple Correlation	0.663	0.720	0.754	0.767	0.776

Table 141. Stepwise Multiple Regression Equations for Estimating Plantar
Arch Height (VAR 7) — Female

Variable	Step 1	2	3	4	5
6 Dorsal Arch Height	0.603	0.707	0.541	0.473	0.397
25 Foot Length,Right		-0.141	-0.140	-0.146	-0.139
4 Medial Malleolus Height			0.228	0.197	0.149
8 Ball of Foot Height				0.413	0.415
5 Lateral Malleolus Height					0.140
Constant	-1.970	0.633	0.318	-0.261	-0.399
Standard Error of Estimate	0.47	0.44	0.42	0.42	0.41
Multiple Correlation	0.613	0.678	0.706	0.717	0.726

Table 142. Stepwise Multiple Regression Equations for Estimating BOF Height (VAR 8) -- Male

Variable	Step				
	1	2	3	4	5
14 Heel-Ankle Circumference	0.102	0.171	0.144	0.123	0.090
24 BOF Length,Right		-0.137	-0.118	-0.219	-0.220
4 Medial Malleolus Height			0.111	0.107	0.109
25 Foot Length,Right				0.110	0.103
16 BOF Circumference,Right					0.063
Constant	0.403	0.741	0.396	0.159	-0.107
Standard Error of Estimate	0.22	0.20	0.19	0.18	0.18
Multiple Correlation	0.602	0.691	0.730	0.762	0.781

Table 143. Stepwise Multiple Regression Equations for Estimating BOF Height (VAR 8) -- Female

Variable	Step				
	1	2	3	4	5
6 Dorsal Arch Height	0.228	0.181	0.176	0.128	0.100
13 Ankle Circumference		0.066	0.055	0.051	0.045
11 Outside BOF Height			0.176	0.209	0.225
7 Plantar Arch Height				0.082	0.070
4 Medial Malleolus Height					0.053
Constant	1.745	0.763	0.539	0.697	0.654
Standard Error of Estimate	0.19	0.18	0.18	0.17	0.17
Multiple Correlation	0.586	0.651	0.672	0.690	0.698

Table 144. Stepwise Multiple Regression Equations for Estimating 1st Toe Height (VAR 9) -- Male

Variable	Step				
	1	2	3	4	5
16 BOF Circumference,Right	0.056	0.038			
11 Outside BOF Height		0.146			
Constant	0.793	0.810			
Standard Error of Estimate	0.20	0.19			
Multiple Correlation	0.339	0.380			

Table 145. Stepwise Multiple Regression Equations for Estimating 1st Toe Height (VAR 9) -- Female

Variable	Step				
	1	2	3	4	5
15 Instep Circumference	0.082	0.058	0.037	0.052	0.046
10 Maximum Toe Height		0.227	0.190	0.185	0.161
17 Heel Breadth,Right			0.092	0.088	0.080
12 Calf Circumference				-0.012	-0.013
11 Outside BOF Height					0.100
Constant	0.017	0.069	0.048	0.183	0.184
Standard Error of Estimate	0.18	0.18	0.18	0.17	0.17
Multiple Correlation	0.431	0.482	0.502	0.513	0.522

Table 146. Stepwise Multiple Regression Equations for Estimating Maximum Toe Height (VAR 10) -- Male

Variable	Step 1	2	3	4	5
15 Instep Circumference	0.112	0.082	0.096	0.072	0.059
11 Outside BOF Height		0.237	0.243	0.216	0.211
33 1st-3rd Toe Breadth			-0.087	-0.082	-0.090
17 Heel Breadth,Right				0.114	0.124
8 Ball of Foot Height					0.117
Constant	-0.392	-0.283	-0.389	-0.193	-0.280
Standard Error of Estimate	0.22	0.21	0.21	0.20	0.20
Multiple Correlation	0.564	0.60	0.621	0.638	0.646

Table 147. Stepwise Multiple Regression Equations for Estimating Maximum Toe Height (VAR 10) -- Female

Variable	Step 1	2	3	4	5
15 Instep Circumference	0.108	0.080	0.067	0.046	0.033
11 Outside BOF Height		0.248	0.216	0.193	0.211
9 1st Toe Height			0.208	0.176	0.172
17 Heel Breadth,Right				0.098	0.084
27 Outside BOF Length					0.029
Constant	-0.226	-0.237	-0.239	-0.251	-0.343
Standard Error of Estimate	0.19	0.18	0.18	0.18	0.18
Multiple Correlation	0.515	0.561	0.586	0.602	0.611

Table 148. Stepwise Multiple Regression Equations for Estimating Outside BOF Height (VAR 11) — Male

Variable	Step 1	2	3	4	5
15 Instep Circumference	0.130	0.100	0.090		
10 Maximum Toe Height		0.262	0.264		
9 1st Toe Height			0.198		
Constant	-0.458	-0.356	-0.520		
Standard Error of Estimate	0.23	0.22	0.22		
Multiple Correlation	0.599	0.632	0.646		

Table 149. Stepwise Multiple Regression Equations for Estimating Outside BOF Height (VAR 11) — Female

Variable	Step 1	2	3	4	5
15 Instep Circumference	0.114	0.084	0.100	0.092	0.122
10 Maximum Toe Height		0.270	0.290	0.277	0.269
27 Outside BOF Length			-0.035	-0.062	-0.067
23 Instep Length				0.065	0.078
18 BOF Breadth,Diagonal					-0.086
Constant	0.044	0.105	0.224	0.172	0.267
Standard Error of Estimate	0.199	0.192	0.190	0.188	0.186
Multiple Correlation	0.517	0.562	0.577	0.594	0.604

311

Table 150. Stepwise Multiple Regression Equations for Estimating Calf
            Circumference (VAR 12) — Male

Variable	Step 1	2	3	4	5
13 Ankle Circumference	1.497	1.198	1.326	1.384	1.260
15 Instep Circumference		0.439	0.875	0.899	0.921
14 Heel-Ankle Circumference			-0.493	-0.483	-0.348
33 1st-3rd Toe Breadth				-0.472	-0.465
3 Ankle Height					-0.282
Constant	3.475	-1.321	1.318	2.448	3.565
Standard Error of Estimate	1.65	1.60	1.56	1.54	1.53
Multiple Correlation	0.788	0.802	0.814	0.819	0.823

Table 151. Stepwise Multiple Regression Equations for Estimating Calf
            Circumference (VAR 12) — Female

Variable	Step 1	2	3	4	5
13 Ankle Circumference	1.276	1.066	1.047	1.091	1.160
15 Instep Circumference		0.384	0.162	0.556	0.539
25 Foot Length,Right			-0.261	-0.367	-0.408
2 Calf Height				0.098	0.114
7 Plantar Arch Height					-0.311
Constant	8.607	4.020	5.487	5.360	5.680
Standard Error of Estimate	1.490	1.454	1.434	1.425	1.416
Multiple Correlation	0.693	0.711	0.722	0.726	0.731

Table 152. Stepwise Multiple Regression Equations for Estimating Ankle
Circumference (VAR 13) -- Male

Variable	Step 1	2	3	4	5
12 Calf Circumference	0.414	0.286	0.258	0.221	0.219
14 Heel-Ankle Cicumference		0.356	0.489	0.582	0.558
2 Calf Height			-0.127	-0.119	-0.119
3 Ankle Height				-0.254	-0.291
5 Lateral Malleolus Height					0.281
Constant	7.060	-0.405	0.435	1.526	0.876
Standard Error of Estimate	0.87	0.72	0.69	0.66	0.63
Multiple Correlation	0.788	0.858	0.873	0.885	0.896

Table 153. Stepwise Multiple Regression Equations for Estimating Ankle
Circumference (VAR 13) -- Female

Variable	Step 1	2	3	4	5
12 Calf Circumference	0.376	0.276	0.261	0.228	0.192
32 Bimalleolar Breadth		1.204	1.089	1.430	0.911
4 Medial Malleolus Height			0.351	0.488	0.465
3 Ankle Height				-0.330	-0.475
14 Heel-Ankle Circumference					0.268
Constant	7.577	3.270	2.024	3.546	1.658
Standard Error of Estimate	0.809	0.720	0.683	0.636	0.591
Multiple Correlation	0.693	0.768	0.794	0.825	0.852

313

Table 154. Stepwise Multiple Regression Equations for Estimating Heel-Ankle Circumference (VAR 14) -- Male

Variable	Step				
	1	2	3	4	5
15 Instep Circumference	1.086	0.776	0.699	0.520	0.392
25 Foot Length,Right		0.420	0.390	0.154	0.143
6 Dorsal Arch Height			0.497	0.738	0.775
22 Ankle Length				0.801	0.732
17 Heel Breadth,Right					0.685
Constant	5.910	2.664	1.069	1.303	0.549
Standard Error of Estimate	0.82	0.72	0.66	0.56	0.52
Multiple Correlation	0.867	0.902	0.918	0.94	0.95

Table 155. Stepwise Multiple Regression Equations for Estimating Heel-Ankle Circumference (VAR 14) -- Female

Variable	Step				
	1	2	3	4	5
15 Instep Circumference	1.122	0.688	0.521	0.355	0.293
25 Foot Length,Right		0.525	0.542	0.498	0.468
13 Ankle Circumference			0.250	0.297	0.256
17 Heel Breadth,Right				0.649	0.743
6 Dorsal Arch Height					0.366
Constant	4.756	2.055	0.354	0.186	-0.314
Standard Error of Estimate	0.790	0.604	0.560	0..523	0.486
Multiple Correlation	0.832	0.906	0.920	0.931	0.941

Table 156. Stepwise Multiple Regression Equations for Estimating Instep
Circumference (VAR 15) — Male

		Step				
Variable		1	2	3	4	5
14 Heel-Ankle Circumference		0.693	0.413	0.374	0.336	0.296
16 BOF Circumference,Right			0.468	0.399	0.392	0.402
12 Calf Circumference				0.085	0.078	0.075
10 Maximum Toe Height					0.576	0.494
17 Heel Breadth,Right						0.236
Constant		2.391	0.220	0.145	0.378	0.206
Standard Error of Estimate		0.66	0.55	0.52	0.51	0.50
Multiple Correlation		0.867	0.910	0.919	0.924	0.926

Table 157. Stepwise Multiple Regression Equations for Estimating Instep
Circumference (VAR 15) — Female

		Step				
Variable		1	2	3	4	5
14 Heel-Ankle Circumference		0.617	0.355	0.316	0.293	0.374
16 BOF Circumference,Right			0.457	0.443	0.408	0.398
10 Maximum Toe Height				0.633	0.630	0.653
12 Calf Circumference					0.067	0.059
23 Instep Length						-0.194
Constant		4.232	1.981	2.025	1.198	1.156
Standard Error of Estimate		0.586	0.489	0.474	0.458	0.449
Multiple Correlation		0.832	0.887	0.894	0.902	0.906

Table 158. Stepwise Multiple Regression Equations for Estimating BOF
Circumference, Right (VAR 16) -- Male

Variable	Step				
	1	2	3	4	5
18 BOF Breadth, Diagonal	2.089	1.888	1.632	1.594	1.599
8 Ball of Foot Height		1.043	0.823	0.765	0.738
15 Instep Circumference			0.162	0.154	0.195
33 1st-3rd Toe Breadth				0.159	0.154
17 Heel Breadth, Right					-0.168
Constant	3.162	1.207	0.532	0.203	0.418
Standard Error of Estimate	0.42	0.33	0.31	0.30	0.29
Multiple Correlation	0.941	0.965	0.970	0.971	0.972

Table 159. Stepwise Multiple Regression Equations for Estimating BOF
Circumference, Right (VAR 16) -- Female

Variable	Step				
	1	2	3	4	5
18 BOF Breadth, Diagonal	2.118	1.990	1.758	1.756	1.750
8 Ball of Foot Height		0.939	0.771	0.751	0.678
15 Instep Circumference			0.149	0.185	0.162
27 Outside BOF Length				-0.067	-0.065
13 Ankle Circumference					0.052
Constant	2.530	0.383	-0.284	-0.042	-0.290
Standard Error of Estimate	0.365	0.296	0.282	0.276	0.273
Multiple Correlation	0.941	0.962	0.966	0.967	0.968

Table 160. Stepwise Multiple Regression Equations for Estimating Heel Breadth, Right (VAR 17) -- Male

Variable	Step				
	1	2	3	4	5
14 Heel-Ankle Circumference	0.190	0.218	0.191	0.221	0.208
5 Lateral Malleolus Height		-0.216	-0.209	-0.217	-0.198
10 Maximum Toe Height			0.307	0.300	0.269
25 Foot Length,Right				-0.043	-0.073
23 Instep Length					0.101
Constant	0.509	1.128	1.196	1.412	1.462
Standard Error of Estimate	0.32	0.29	0.28	0.28	0.28
Multiple Correlation	0.694	0.769	0.784	0.788	0.796

Table 161. Stepwise Multiple Regression Equations for Estimating Heel Breadth, Right (VAR 17) -- Female

Variable	Step				
	1	2	3	4	5
14 Heel-Ankle Circumference	0.204	0.229	0.156	0.175	0.212
4 Medial Malleolus Height		-0.165	-0.165	-0.133	-0.092
15 Instep Circumference			0.119	0.145	0.154
13 Ankle Circumference				-0.085	-0.125
3 Ankle Height					-0.089
Constant	0.016	0.434	-0.070	0.286	0.451
Standard Error of Estimate	0.313	0.294	0.286	0.277	0.272
Multiple Correlation	0.682	0.726	0.744	0.763	0.774

Table 162. Stepwise Multiple Regression Equations for Estimating BOF
Breadth, Diagonal (VAR 18) -- Male

Variable	Step 1	2	3	4	5
16 BOF Circumference,Right	0.424	0.476	0.409	0.388	0.370
8 Ball of Foot Height		-0.418	-0.381	-0.359	-0.320
26 BOF Breadth,Horizontal,Right			0.175	0.176	0.206
24 BOF Length,Right				0.032	0.071
27 Outside BOF Length					-0.048
Constant	-0.132	0.177	-0.374	-0.236	-0.195
Standard Error of Estimate	0.19	0.16	0.16	0.15	0.15
Multiple Correlation	0.941	0.956	0.961	0.962	0.963

Table 163. Stepwise Multiple Regression Equations for Estimating BOF
Breadth, Diagonal (VAR 18) -- Female

Variable	Step 1	2	3	4	5
16 BOF Circumference,Right	0.418	0.456	0.388	0.360	0.368
8 Ball of Foot Height		-0.375	-0.345	-0.310	-0.290
26 BOF Breadth,Horizontal,Right			0.183	0.197	0.193
24 BOF Length,Right				0.036	0.391
11 Outside BOF Height					-0.110
Constant	0.023	0.527	0.276	0.032	0.051
Standard Error of Estimate	0.162	0.142	0.134	0.130	0.129
Multiple Correlation	0.941	0.956	0.960	0.963	0.964

Table 164. Stepwise Multiple Regression Equations for Estimating Weight
(VAR 21) -- Male

Variable	Step				
	1	2	3	4	5
12 Calf Circumference	3.375	2.314	2.136	2.300	2.63
14 Heel-Ankle Circumference		2.944	2.325	1.629	2.134
11 Outside BOF Height			8.297	7.893	8.234
2 Calf Height				0.693	0.615
32 Bimalleolar Breadth					-3.084
Constant	-48.947	-110.719	-107.258	-112.046	-107.496
Standard Error of Estimate	7.16	5.98	5.66	5.53	5.47
Multiple Correlation	0.784	0.856	0.872	0.879	0.882

Table 165. Stepwise Multiple Regression Equations for Estimating Weight
(VAR 21) -- Female

Variable	Step				
	1	2	3	4	5
12 Calf Circumference	2.300	1.651	1.746	1.674	1.465
14 Heel-Ankle Circumference		2.065	1.294	0.677	0.356
2 Calf Height			0.661	0.717	0.827
16 BOF Circumference				1.053	1.009
13 Ankle Circumference					0.785
Constant	-20.496	-61.600	-62.091	-66.116	-67.683
Standard Error of Estimate	4.74	3.95	3.76	3.69	3.66
Multiple Correlation	0.708	0.809	0.830	0.836	0.840

Table 166. Stepwise Multiple Regression Equations for Estimating Ankle Length (VAR 22) — Male

Variable	Step 1	2	3	4	5
24 BOF Length,Right	0.529	0.323	0.191	0.146	0.127
23 Instep Length		0.363	0.302	0.208	0.235
14 Heel-Ankle Circumference			0.142	0.269	0.314
6 Dorsal Arch Height				-0.352	-0.386
17 Heel Breadth,Right					-0.200
Constant	0.434	0.366	-1.224	-0.481	-0.280
Standard Error of Estimate	0.45	0.41	0.38	0.34	0.34
Multiple Correlation	0.787	0.826	0.85	0.884	0.887

Table 167. Stepwise Multiple Regression Equations for Estimating Ankle Length (VAR 22) — Female

Variable	Step 1	2	3	4	5
25 Foot Length,Right	0.365	0.204	0.114	0.150	0.091
23 Instep Length		0.362	0.378	0.331	0.217
15 Instep Circumference			0.153	0.198	0.061
6 Dorsal Arch Height				-0.240	-0.337
14 Heel-Ankle Circumference					0.222
Constant	0.748	0.966	-0.579	-0.068	-0.342
Standard Error of Estimate	0.407	0.376	0.357	0.332	0.312
Multiple Correlation	0.761	0.801	0.823	0.849	0.869

Table 168. Stepwise Multiple Regression Equations for Estimating Instep Length (VAR 23) -- Male

Variable	Step 1	2	3	4	5
24 BOF Length,Right	0.569	0.329	0.294	0.338	0.224
22 Ankle Length		0.454	0.382	0.439	0.426
17 Heel Breadth,Right			0.320	0.444	0.452
15 Instep Circumference				-0.121	-0.141
25 Foot Length,Right					0.118
Constant	0.186	-0.011	-0.793	0.022	-0.335
Standard Error of Estimate	0.50	0.46	0.44	0.43	0.43
Multiple Correlation	0.775	0.816	0.829	0.839	0.843

Table 169. Stepwise Multiple Regression Equations for Estimating Instep Length (VAR 23) -- Female

Variable	Step 1	2	3	4	5
25 Foot Length,Right	0.444	0.296	0.168	0.206	0.184
22 Ankle Length		0.406	0.357	0.406	0.374
24 BOF Length,Right			0.191	0.179	0.190
15 Instep Circumference				-0.875	-0.150
17 Heel Breadth,Right					0.324
Constant	-0.603	-0.907	-0.696	0.142	0.206
Standard Error of Estimate	0.431	0.399	0.390	0.384	0.371
Multiple Correlation	0.803	0.835	0.843	0.848	0.860

Table 170. Stepwise Multiple Regression Equations for Estimating BOF
Length, Right (VAR 24) -- Male

Variable	Step 1	2	3	4	5
25 Foot Length,Right	0.710	0.560	0.605	0.531	0.449
22 Ankle Length		0.376	0.396	0.260	0.252
8 Ball of Foot Height			-0.630	-0.934	-0.886
14 Heel-Ankle Circumference				0.162	0.134
28 5th Toe Length					0.152
Constant	0.521	0.477	1.508	0.618	0.380
Standard Error of Estimate	0.47	0.43	0.40	0.38	0.37
Multiple Correlation	0.901	0.916	0.928	0.936	0.939

Table 171. Stepwise Multiple Regression Equations for Estimating BOF
Length, Right (VAR 24) -- Female

Variable	Step 1	2	3	4	5
25 Foot Length,Right	0.765	0.800	0.681	0.581	0.511
8 Ball of Foot Height		-0.741	-0.689	-0.662	-0.706
23 Instep Length			0.262	0.263	0.257
27 Outside BOF Length				0.154	0.194
18 BOF Breadth,Diagonal					0.208
Constant	-0.906	0.880	0.913	0.967	0.302
Standard Error of Estimate	0.462	0.430	0.415	0.408	0.401
Multiple Correlation	0.908	0.921	0.927	0.930	0.932

Table 172. Stepwise Multiple Regression Equations for Estimating Foot Length, Right (VAR 25) -- Male

Variable	Step 1	2	3	4	5
24 Foot Length,Right	1.144	1.080	0.814	0.770	0.755
8 Ball of Foot Height		0.995	0.780	0.950	0.828
28 5th Toe Length			0.319	0.346	0.326
7 Plantar Arch Height				-0.173	-0.312
6 Dorsal Arch Height					0.235
Constant	4.480	1.832	0.991	1.126	0.683
Standard Error of Estimate	0.59	0.53	0.50	0.49	0.48
Multiple Correlation	0.901	0.922	0.932	0.934	0.937

Table 173. Stepwise Multiple Regression Equations for Estimating Foot Length, Right (VAR 25) -- Female

Variable	Step 1	2	3	4	5
24 BOF Length,Right	1.078	0.714	0.602	0.609	0.548
28 5th Toe Length		0.448	0.337	0.349	0.344
14 Heel-Ankle Circumference			0.210	0.182	0.158
33 1st-3rd Toe Breadth				0.177	0.181
23 Instep Length					0.168
Constant	5.259	2.945	0.603	-0.012	0.171
Standard Error of Estimate	0.548	0.451	0.411	0.406	0.400
Multiple Correlation	0.908	0.939	0.949	0.951	0.952

Table 174. Stepwise Multiple Regression Equations for Estimating BOF
Breadth, Horizontal, Right (VAR 26) -- Male

Variable	Step				
	1	2	3	4	5
18 BOF Breadth, Diagonal	0.814	0.752	0.869	0.694	0.656
27 Outside BOF Length		0.071	0.178	0.171	0.188
24 BOF Length,Right			-0.163	-0.160	-0.183
16 BOF Circumference,Right				0.085	0.111
7 Plantar Arch Height					-0.075
Constant	1.502	0.959	1.158	0.929	1.076
Standard Error of Estimate	0.29	0.29	0.27	0.27	0.27
Multiple Correlation	0.842	0.850	0.866	0.868	0.872

Table 175. Stepwise Multiple Regression Equations for Estimating BOF
Breadth, Horizontal, Right (VAR 26) -- Female

Variable	Step				
	1	2	3	4	5
18 BOF Breadth,Diagonal	0.808	0.540	0.612	0.644	0.593
16 BOF Circumference,Right		0.127	0.123	0.119	0.146
24 BOF Length,Right			-0.048	-0.132	-0.145
27 Outside BOF Length				0.106	0.116
7 Plantar Arch Height					-0.050
Constant	1.456	1.135	1.378	1.081	1.168
Standard Error of Estimate	0.241	0.237	0.233	0.225	0.224
Multiple Correlation	0.850	0.856	0.861	0.871	0.874

Table 176. Stepwise Multiple Regression Equations for Estimating Outside BOF Length (VAR 27) — Male

Variable	Step 1	Step 2	Step 3	Step 4	Step 5
28 5th Toe Length	0.826	0.884	0.788	0.750	
18 BOF Breadth,Diagonal		-0.194	-0.267	-0.447	
24 BOF Length,Right			0.147	0.182	
27 BOF Breadth,Horizontal,Right				0.219	
Constant	-.013	-0.501	-0.528	-0.734	
Standard Error of Estimate		0.39	0.38	0.38	
Multiple Correlation		0.924	0.927	0.929	

Table 177. Stepwise Multiple Regression Equations for Estimating Outside BOF Length (VAR 27) — Female

Variable	Step 1	Step 2	Step 3	Step 4	Step 5
28 5th Toe Length	0.789	0.589	0.622	0.555	0.542
24 BOF Length,Right		0.248	0.303	0.199	0.213
16 BOF Circumference,Right			-0.138	-0.165	-0.258
25 Foot Length,Right				0.161	0.162
26 BOF Breadth,Horizontal,Right					0.258
Constant	-0.515	-1.196	0.484	0.342	0.067
Standard Error of Estimate	0.432	0.398	0.379	0.373	0.368
Multiple Correlation	0.900	0.916	0.924	0.927	0.929

Table 178. Stepwise Multiple Regression Equations for Estimating 5th Toe
Length (VAR 28) -- Male

Variable	Step 1	2	3	4	5
27 Outside BOF Length	1.024	0.719	0.737	0.726	0.707
25 Foot Length,Right		0.280	0.207	0.210	0.193
18 BOF Breadth,Diagonal			0.229	0.227	0.233
5 Lateral Malleolus Height				0.071	0.064
2 Calf Height					0.025
Constant	4.674	2.199	1.446	1.081	0.963
Standard Error of Estimate	0.44	0.38	0.37	0.37	0.36
Multiple Correlation	0.920	0.941	0.945	0.946	0.947

Table 179. Stepwise Multiple Regression Equations for Estimating 5th Toe
Length (VAR 28) -- Female

Variable	Step 1	2	3	4	5
27 Outside BOF Length	1.028	0.685	0.732	0.757	
25 Foot Length,Right		0.307	0.230	0.317	
16 BOF Circumference, Right			0.090	0.091	
24 BOF Length,Right				-0.135	
Constant	4.235	1.859	0.990	0.870	
Standard Error of Estimate	0.493	0.445	0.440	0.436	
Multiple Correlation	0.900	0.920	0.922	0.924	

Table 180. Stepwise Multiple Regression Equations for Estimating Bimalleolar Breadth (VAR 32) — Male

Variable	Step 1	2	3	4	5
14 Heel-Ankle Circumference	0.172	0.183	0.134	0.089	0.085
7 Plantar Arch Height		-0.132	-0.144	-0.155	-0.108
13 Ankle Circumference			0.080	0.117	0.127
3 Ankle Height				0.086	0.099
5 Lateral Malleolus Height					-0.076
Constant	1.396	1.436	1.366	1.008	1.151
Standard Error of Estimate	0.29	0.28	0.27	0.26	0.26
Multiple Correlation	0.704	0.729	0.753	0.771	0.778

Table 181. Stepwise Multiple Regression Equations for Estimating Bimalleolar Breadth (VAR 32) — Female

Variable	Step 1	2	3	4	5
14 Heel-Ankle Circumference	0.176	0.129	0.146	0.108	0.080
13 Ankle Circumference		0.100	0.107	0.142	0.133
6 Dorsal Arch Height			-0.092	-0.131	-0.126
3 Ankle Height				0.090	0.086
15 Instep Circumference					0.052
Constant	1.088	0.445	0.520	0.301	0.131
Standard Error of Estimate	0.248	0.232	0.227	0.220	0.218
Multiple Correlation	0.710	0.755	0.767	0.784	0.789

Table 182. Stepwise Multiple Regression Equations for Estimating 1st-3rd Toe Breadth (VAR 33) -- Male

Variable	Step 1	2	3	4	5
16 BOF Circumference,Right	0.211	0.242	0.224	0.178	0.191
2 Calf Height		-0.043	-0.048	-0.045	-0.046
4 Medial Malleolus Height			0.142	0.113	0.101
13 Ankle Circumference				0.063	0.123
12 Calf Circumference					-0.044
Constant	1.884	2.595	2.055	1.933	2.012
Standard Error of Estimate	0.47	0.46	0.45	0.45	0.44
Multiple Correlation	0.492	0.521	0.547	0.559	0.574

Table 183. Stepwise Multiple Regression Equations for Estimating 1st-3rd Toe Breadth (VAR 33) -- Female

Variable	Step 1	2	3	4	5
16 BOF Circumference,Right	0.176	0.202	0.184	0.179	0.131
24 BOF Length,Right		-0.046	-0.132	-0.129	-0.132
25 Foot Length,Right			0.088	0.149	0.146
28 5th Toe Length				-0.080	-0.092
15 Instep Circumference					0.071
Constant	2.438	2.674	2.455	2.610	2.384
Standard Error of Estimate	0.388	0.386	0.384	0.381	0.380
Multiple Correlation	0.442	0.453	0.465	0.477	0.485

REFERENCES

Churchill, E., J.T. McConville, L.L. Laubach and R.M. White (1971)
Anthropometry of U.S. Army Aviators - 1970. Technical Report 72-52-CE, U.S.
Army Natick Laboratories, Natick, MA. (AD743 529)

Churchill, E., T. Churchill, J.T. McConville, and R.M. White (1977)
Anthropometry of Women of the U.S. Army - 1977:   Report No. 2, The Basic
Univariate Statistics. Technical Report NATICK/TR-77/024, U.S. Army Natick
Research and Development Command, Natick, MA. (AD A044 806)

Clauser, C., P. Tucker, J. McConville, E. Churchill, L. Laubach, and J. Reardon
(1972) Anthropometry of Air Force Women. Technical Report AMRL-TR-70/5,
Aerospace Medical Research Laboratory, Wright-Patterson Air Force Base, Ohio.

Clauser, C., I. Tebbetts, B. Bradtmiller, J. McConville, and C.C. Gordon
(1988) Measurer's Handbook: U.S. Army Anthropometric Survey - 1987-1988.
Technical Report NATICK/TR-88/043, U.S. Army Natick Research, Development and
Engineering Center, Natick, MA. (AD A202 721)

Freedman, A., E.C. Huntington, G.C. Davis, R.B. Magee, V.M. Milstead, and C.M.
Kirkpatrick (1946) Foot Dimensions of Soldiers. Third Partial Report,
Project T-13, Armored Medical Research Laboratory, Fort Knox, KY.

Gorden, C.C., T. Churchill, C.E. Clauser, B. Bradtmiller, J.T. McConville,
I. Tebbetts, and R.A. Walker (1989) 1988 Anthropometric Survey of U.S. Army
Personnel: Summary Statistics Interim Report. Technical Report
NATICK/TR-89/027, U.S. Army Natick Research, Development and Engineering
Center, Natick, MA. (AD A209 600)

Hays, W. (1981) Statistics (3rd Edition). Holt, Rinehart, and Winston, New
York.

Laubach, L.L., J.T. McConville, E. Churchill, and R.M. White (1977)
Anthropometry of Women of the U.S. Army - 1977: Report No. 1, Methodology and
Survey Plan. Technical Report NATICK/TR-77/021, U.S. Army Natick Research and
Development Command, Natick, MA. (AD A043 715)

McConville, J.T., E. Churchill, T. Churchill, and R.M. White (1977)
Anthropometry of Women of the U.S. Army - 1977: Report No. 5, Comparative Data
for U.S. Army Men. Technical Report NATICK/TR-77/029, U.S. Army Natick
Research and Development Command, Natick, MA. (AD A048 591)

Mann, C.W. and W.B. Zacharias (1952) Application of Foot Measurements in the
Development of Last Systems. Footwear and Leather Series - Report No. 7,
Department of the Army, Office of the Quartermaster General, Washington, D.C.

Neter, J. and W. Wasserman (1974) Applied Linear Statistical Models.
Richard D. Irwin, Inc., Homewood, IL.

REFERENCES (continued)

Newman, R.W. and R.M. White (1951) Reference Anthropometry of Army Men. Environmental Protection Section Report No. 180, U.S. Army Quartermaster Climatic Research Laboratory, Lawrence, MA.

Nie, N.H., C.H. Hull, J.G. Jenkins, K. Steinbrenner, and D.H. Bent (1975) Statistical Package for the Social Sciences. McGraw-Hill Book Co., New York, NY.

Randall, F.E. (1947) Survey of Body Size of Army Personnel, Male and Female: Project No. E-59-46, Phase 4, Report No. 1 - Methodology and General Considerations (Female). Report No. 123, U.S. Army Quartermaster Climatic Research Laboratory, Lawrence, MA.

Randall, F.E. and M.J. Baer (1947) Survey of Body Size of Army Personnel, Male and Female: Project No. E-59-46, Phase 1, Report No. 1 - Methodology. Report No. 122, U.S. Army Quartermaster Climatic Research Laboratory, Lawrence, MA.

Randall, F.E. and E.H. Munro (1949) Reference Anthropometry of Army Women. Environmental Protection Section Report No. 149, U.S. Army Quartermaster Climatic Research Laboratory, Lawrence, MA.

Randall, F.E., E.H. Munro, and R.M. White (1951) Anthropometry of the Foot (U.S. Army White Male). Environmental Protection Section Report No. 172, U.S. Army Quartermaster Climatic Research Laboratory, Lawrence, MA.

Sokal, R.R. and F.J. Rohlf (1981) Biometry: The Principles and Practice of Statistics in Biological Research. W.H. Freeman and Co., San Francisco, CA.

White, R.M. (1961) Anthropometry of Army Aviators. Enviromental Protection Division Technical Report EP-150, U.S. Army Quartermaster Research and Engineering Center, Natick, MA.

White, R.M. (1982) Comparative Anthropometry of The Foot. Technical Report NATICK/TR-83/010, U.S. Army Natick Research and Development Laboratories, Natick, MA. (AD A126 189)

White, R.M. and E. Churchill (1971) The Body Size of Soldiers: U.S. Army Anthropometry - 1966. Technical Report 72-51-CE, U.S. Army Natick Laboratories, Natick, MA. (AD 743 465)

APPENDIXES

A. Foot Measurement and Boot Fit Study: Biographical Survey

B. Measurement Record

APPENDIXES

A: FOOT MEASUREMENT AND BOOT FIT STUDY

The U.S. Army recently adopted a new-style combat boot to replace the black leather boot which is issued today. The new boot will be available in 1986. In preparation for the introduction of the new combat boot, it is necessary to determine the sizes in which the boot should be produced.

The U.S. Army Natick Research and Development Center, Natick, MA, is the Army element which develops military footwear and which must determine the sizes for the new boot. In order to do this, information is needed on the foot and lower leg dimensions of Army personnel and on the way various sizes of boots fit the feet.   YOU ARE THE BEST SOURCE OF THIS INFORMATION.

Those of us here from Natick today request your cooperation and assistance in the following areas:

First: Biographical information and some facts regarding the footwear you use today are required. Therefore, please complete the Biographical Survey which begins on the next page. Also, enter your name, Social Security Number, and sex in the places indicated on the other forms you have been given.

Second: Measurements are needed of your lower legs and feet. For this, you will remove your footgear, including socks, and roll your trousers up to just below your knees. Your height and weight will also be measured. While we measure you, you will be asked to stand up straight, with your arms at your sides, and your weight evenly distributed on both feet.

Third: Some of you will be asked to try on boots so that the fit of the boots can be checked. For this, you will roll your trousers up to just below your knees and wear green cushion-sole socks. You will be asked to tell us how boots in various sizes feel to you.

THANK YOU FOR YOUR HELP WITH THE ARMY'S FOOTWEAR PROGRAM

= =

BIOGRAPHICAL SURVEY

(Please PRINT all requested information)

1. Name _____
           (Last)   (First)   (Middle)

2. Soc. Security No. _____

3. Date of Birth _____
                  (Month)   (Day)   (Year)

4. Sex: ☐ Male   ☐ Female

5. MOS: Primary _____   Secondary _____

6. Rank _____

7. Date of First Enlistment _____
                            (Month)   (Year)

8. Age _____ years

9. Your place of birth _____
                       (U.S. State or U.S. Territory.   Enter country if not born in U.S. or U.S. Territory)

10. Your time in service _____ years

11. Your MOTHER'S place of birth _____
                                 (U.S. State or U.S. Territory.   Enter country if not born in U.S. or
                                 U.S. Territory)

12. Your FATHER'S place of birth _____
                                 (U.S. State or U.S. Territory.   Enter country if not born in U.S. or
                                 U.S. Territory)

13. Which hand do you usually write with?

       ☐ Right   ☐ Left   ☐ Either hand

14. How tall are you in bare feet? _____ inches

15. How much do you weigh without clothes on? _____ pounds

16. Do you consider yourself:

       ☐ Right-handed?   ☐ Left-handed?   ☐ Ambidextrous?

17. On the average, how many days per week do you wear combat boots?

       _____ days per week

333

18. Which racial category best describes you?

☐ White ☐ Black ☐ Asian ☐ Pacific Islander ☐ American Indian

19. To what ethnic group do you belong?

☐ Puerto Rican

☐ Mexican

☐ Cuban

☐ Haitian

☐ Other Latin American (Specify) _____

☐ South American (Specify) _____

☐ Spanish

☐ Portuguese

☐ Other Hispanic (Specify) _____

☐ American Indian

☐ Eskimo

☐ Aleut

☐ Other Native American (Specify) _____

☐ Melanesian

☐ Micronesian

☐ Polynesian

☐ Other Pacific Islander (Specify) _____

☐ Filipino

☐ Chinese

☐ Japanese

☐ Korean

☐ Vietnamese

☐ Thai

☐ East Indian

☐ Other Asian (Specify) _____

☐ American of European Descent

☐ American of African Descent

☐ American of Hispanic Descent

☐ American of Asian Descent

☐ Other Ethnic Group. (Specify) _____

20. Which racial category best describes your MOTHER?

☐ White ☐ Black ☐ Asian ☐ Pacific ☐ American ☐ Don't
　　　　　　　　　　　　　　　　　　 Islander 　　Indian 　　 Know

21. To what ethnic group does your MOTHER belong?

☐ Puerto Rican

☐ Mexican

☐ Cuban

☐ Haitian

☐ Other Latin American
　 (Specify) _____

☐ South American
　 (Specify)

☐ Spanish

☐ Portuguese

☐ Other Hispanic
　 (Specify) _____

☐ American Indian

☐ Eskimo

☐ Aleut

☐ Other Native American
　 (Specify)

☐ Melanesian

☐ Micronesian

☐ Polynesian

☐ Other Pacific Islander
　 (Specify) _____

☐ Filipino

☐ Chinese

☐ Japanese

☐ Korean

☐ Vietnamese

☐ Thai

☐ East Indian

☐ Other Asian
　 (Specify) _____

☐ American of European Descent

☐ American of African Descent

☐ American of Hispanic Descent

☐ American of Asian Descent

☐ Other Ethnic Group. (Specify) _____

☐ Don't Know

22. Which racial category best describes your FATHER?

☐ White ☐ Black ☐ Asian ☐ Pacific Islander ☐ American Indian ☐ Don't Know

23. To what ethnic group does your FATHER belong?

☐ Puerto Rican

☐ Mexican

☐ Cuban

☐ Haitian

☐ Other Latin American (Specify) _____

☐ South American (Specify)

☐ Spanish

☐ Portuguese

☐ Other Hispanic (Specify). _____

☐ American Indian

☐ Eskimo

☐ Aleut

☐ Other Native American (Specify) .. _____

☐ Melanesian

☐ Micronesian

☐ Polynesian

☐ Other Pacific Islander (Specify) ._____

☐ Filipino

☐ Chinese

☐ Japanese

☐ Korean

☐ Vietnamese

☐ Thai

☐ East Indian

☐ Other Asian (Specify) _____

☐ American of European Descent

☐ American of African Descent

☐ American of Hispanic Descent

☐ American of Asian Descent

☐ Other Ethnic Group. (Specify) _____

☐ Don't Know

24. For each of the different types of shoes and boots listed below, indicate the size, <u>including the width</u>, that you normally take:

	Size with Width	Don't Know
Standard-Issue Black Combat Boot	_____	_____
Corcoran Jump Boot	_____	_____
Civilian Dress Shoe	_____	_____
Running Shoe	_____	_____

25. What type of socks do you usually wear with your boots?

☐ Army standard-issue green cushion-sole socks

☐ Other. Describe the style and type of socks you usually wear: _____

26. Have you ever had a broken...

	Yes	No
Leg	☐	☐
Ankle	☐	☐
Toe	☐	☐
Foot bone	☐	☐

27. <u>During your time in service</u>, have you ever developed callouses or blisters on the front of your ankles or the top of your feet that you think were caused by wearing boots?

☐ Yes   ☐ No

28. <u>During your time in service</u>, have you ever gone on sick call because of foot or lower leg problems?

☐ Yes   ☐ No

29. <u>In the past month</u>, have you gone on sick call because of foot or lower leg problems?

☐ Yes   ☐ No

If you answered 'Yes,' explain what the problem was:_____

BIOGRAPHICAL SURVEY - Page 5 of 7 pages

337

30. Which ONE type of combat boot do you now wear most often?

☐ Standard-issue black leather boot

☐ Corcoran jump boot

☐ West German jump boot

☐ Other. (Specify) _____

31. Indicate the size, including the width, of the combat boots that you now wear most often.

Size with Width _____

32. Rate the fit of the combat boots that you now wear most often.

Fit in the heel area:	☐ Too tight	☐ Too loose	☐ Good fit
Amount of toe room:	☐ Too short	☐ Too long	☐ Good fit
Height of the boot top:	☐ Too high	☐ Too low	☐ Good
Support at the ankle:	☐ Too tight	☐ Too loose	☐ Good
Width of the boot:	☐ Too wide	☐ Too narrow	☐ Good

33. Indicate the ONE area in which you have felt the greatest discomfort while wearing the boots you now use most often.

☐ Toes

☐ Soles of the feet

☐ Back of the heels

☐ Front of the ankles

☐ Back of the ankles

☐ Lower legs between the ankle and the top of the boots

☐ Top of the boots

☐ Other. (Specify) _____

☐ No discomfort felt

BIOGRAPHICAL SURVEY - Page 6 of 7 pages

34. Rate the combat boots you <u>now wear most often</u> with regard to overall comfort and fit.

☐ Very comfortable

☐ Moderately comfortable

☐ Adequate

☐ Moderately uncomfortable

☐ Very uncomfortable

B: MEASUREMENT RECORD

Subject No._____   Date_____

===

Name_____   Soc. Security No._____
   (Last)   (First)   (Middle)   Sex: ☐ Male   ☐ Female

===

Marker_____   Obs: W   B   O   P   H   A   DK
                                             Obs2:_____

GROUP I   Clothing:_____

Measurer_____   ID:_ _ _ _ 2

   ID:_ _ _ _ 1   17. Heel Breadth, Right_____:___:___:___:___:

1. Stature_____:___:___:___:___: 18. Ball Breadth, Diag_____:___:___:___:___:

2. Calf Ht_____:___:___:___:___: 19. Heel Breadth, LEFT_____:___:___:___:___:

3. Ankle Ht_____:___:___:___:___: 20. Ball Circ, LEFT_____:___:___:___:___:

4. Medial Malleolus Ht_____:___:___:___:___: 21. Weight_____:___:___:___:___:

5. Lateral Malleolus Ht_____:___:___:___:___:

6. Dorsal Arch Ht_____:___:___:___:___: ## GROUP III

7. Plantar Arch Ht_____:___:___:___:___: Measurer_____

8. Ball Ht_____:___:___:___:___:

9. 1st Toe Ht_____:___:___:___:___: 22. Ankle Length_____:___:___:___:___:

10. Max Toe Ht (Toe___)_____:___:___:___:___: 23. Instep Length_____:___:___:___:___:

11. Outside Ball Ht_____:___:___:___:___: 24. Ball Length, Right_____:___:___:___:___:

                                             25. Foot Length, Right (Toe___):___:___:___:___:

                                             26. Ball Breadth, Horiz, Right_:___:___:___:___:

GROUP II   27. Outside Ball Length_____:___:___:___:___:

Measurer_____   28. 5th Toe Length_____:___:___:___:___:

12. Calf Circ_____:___:___:___: 29. Ball Length, LEFT_____:___:___:___:___:

13. Ankle Circ_____:___:___:___: 30. Foot Length, LEFT (Toe___)_:___:___:___:___:

14. Heel-Ankle Circ_____:___:___:___: 31. Ball Breadth, Horiz, LEFT__:___:___:___:___:

15. Instep Circ_____:___:___:___: 32. Bimalleolar Breadth_____:___:___:___:___:

16. Ball Circ, Right_____:___:___:___: 33. Breadth, 1st-3rd Toes_____:___:___:___:___:

NATICK Form 602 (ONE-TIME)
1 Jun 85